

# DSC-P200

## SERVICE MANUAL

Ver 1.0 2005.01

Revision History

How to use  
Acrobat Reader



Photo: Silver

US Model  
Canadian Model  
AEP Model  
UK Model  
E Model  
Hong Kong Model  
Australian Model  
Chinese Model  
Korea Model  
Tourist Model

### Link

<a href="#">SPECIFICATIONS</a>	<a href="#">BLOCK DIAGRAMS</a>	<a href="#">PRINTED WIRING BOARDS</a>
<a href="#">SERVICE NOTE</a>	<a href="#">FRAME SCHEMATIC DIAGRAM</a>	<a href="#">REPAIR PARTS LIST</a>
<a href="#">DISASSEMBLY</a>	<a href="#">SCHEMATIC DIAGRAMS</a>	

- For ADJUSTMENTS (SECTION 6), refer to SERVICE MANUAL, ADJ (9-876-854-51).
- **Reference No. search on printed wiring boards is available.**
- [Note in Lens Frame Installation](#)
- [Exchange Method of Barrier Assy](#)

#### On the CH-146, SY-123 boards

This service manual provides the information that is premised the circuit board replacement service and not intended repair inside the CH-146, SY-123 boards.

Therefore, schematic diagram, printed wiring board and electrical parts list of the CH-146, SY-123 boards are not shown.

The following pages are not shown.

Schematic diagrams .....	Pages 4-9 to 4-28
Printed wiring boards .....	Pages 4-39 to 4-42
Waveforms .....	Pages 4-45 and 4-46
Mounted parts location .....	Page 4-48 and 49
Electrical parts list .....	Pages 5-7 to 5-11

The above-described information is shown in service manual Level 3.

## DIGITAL STILL CAMERA

# SONY®



Cyber-shot



## SPECIFICATIONS

### Camera

#### [System]

Image device	9.11 mm (1/1.8 type) color CCD, Primary color filter
Total pixel number of camera	Approx. 7 410 000 pixels
Effective pixel number of camera	Approx. 7 201 000 pixels
Lens	Carl Zeiss Vario-Tessar 3× zoom lens f = 7.9 - 23.7 mm (38 - 114 mm when converted to a 35 mm still camera) F2.8 - 5.2
Exposure control	Automatic exposure, Manual exposure, Scene Selection (9 modes)
White balance	Automatic, Daylight, Cloudy, Fluorescent, Incandescent, Flash, One push
File format (DCF compliant)	Still images: Exif Ver. 2.2 JPEG compliant, DPOF compatible Movies: MPEG1 compliant (Monaural)
Recording media	"Memory Stick"
Flash	Recommended distance (ISO set to Auto): 0.2 m to 3.5 m (7 7/8 inches to 11 feet 5 3/4 inches) (W)/0.3 m to 2.5 m (11 7/8 inches to 8 feet 2 3/8 inches) (T)

#### [Input and Output connectors]

Multi connector	
USB communication	Hi-Speed USB (USB 2.0 compliant)

#### [LCD screen]

LCD panel	5.1 cm (2.0 type) TFT drive
Total number of dots	134 000 (560×240) dots

#### [Power, general]

Battery pack used	NP-FR1
Power requirements	3.6 V
Power consumption (during shooting with the LCD screen on)	1.2 W
Operating temperature	0°C to +40°C (+32°F to +104°F)
Storage temperature	-20°C to +60°C (-4°F to +140°F)
Dimensions	104.5×51.5×27.9 mm (4 1/8×2 1/8×1 1/8 inches) (W/H/D, excluding maximum protrusions)
Mass	Approx. 180 g (6.3 oz) (including NP-FR1 battery pack, "Memory Stick", and wrist strap)
Microphone	Electret condenser microphone
Speaker	Dynamic speaker
Exif Print	Compatible
PRINT Image Matching II	Compatible
PictBridge	Compatible

#### AC-LS5/LS5B AC Adaptor

Input rating	100 V to 240 V AC, 50/60 Hz, 11 W
Output rating	4.2 V DC* * See the label on the AC Adaptor for other specifications.
Operating temperature	0°C to +40°C (+32°F to +104°F)
Storage temperature	-20°C to +60°C (-4°F to +140°F)
Dimensions	Approx. 48×29×81 mm (1 15/16×1 3/16×3 1/4 inches) (W/H/D, excluding projecting parts)
Mass	Approx. 130 g (5 oz) excluding power cord (mains lead)

#### NP-FR1 battery pack

Battery used	Lithium-ion battery
Maximum voltage	DC 4.2 V
Nominal voltage	DC 3.6 V
Capacity	4.4 Wh (1 220 mAh)

Design and specifications are subject to change without notice.

#### CAUTION

Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type.

#### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

#### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  $\triangle$  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
  - Keep the temperature of the soldering iron around 270°C during repairing.
  - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
  - Be careful not to apply force on the conductor when soldering or unsoldering.

#### Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.  
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)



#### : LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.  
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.  
Soldering irons using a temperature regulator should be set to about 350°C.  
Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity  
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder  
It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

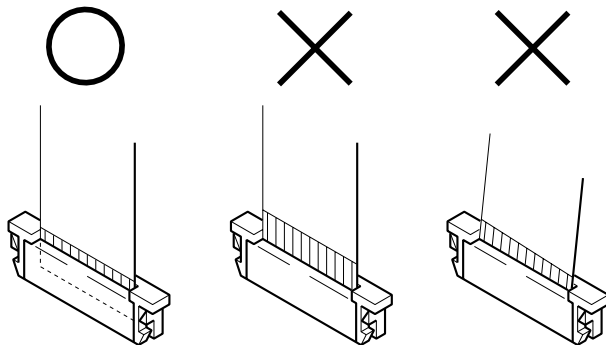
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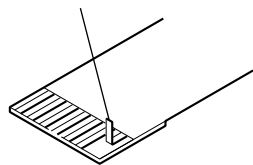
## 1. SERVICE NOTE

### 1-1. NOTE FOR REPAIR

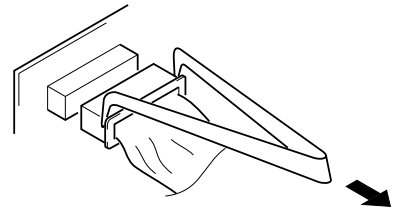
Make sure that the flat cable and flexible board are not cracked or bent at the terminal.  
Do not insert the cable insufficiently nor crookedly.



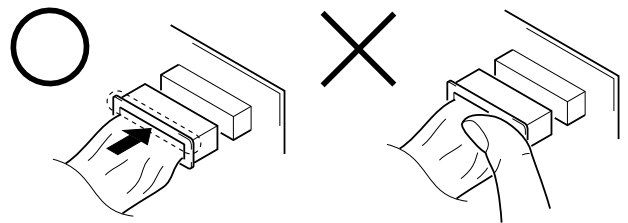
Cut and remove the part of gilt which comes off at the point.  
(Be careful or some pieces of gilt may be left inside)



When remove a connector, don't pull at wire of connector.  
It is possible that a wire is snapped.



When installing a connector, don't press down at wire of connector.  
It is possible that a wire is snapped.



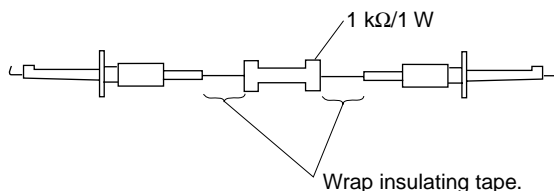
### 1-2. DISCHARGING OF THE FP-163 FLEXIBLE BOARD'S CHARGING CAPACITOR (C601)

The charging capacitor (C601) of the FP-163 flexible board is charged up to the maximum 300 V potential.  
There is a danger of electric shock by this high voltage when the capacitor is handled by hand. The electric shock is caused by the charged voltage which is kept without discharging when the main power of the unit is simply turned off. Therefore, the remaining voltage must be discharged as described below.

#### Preparing the Short Jig

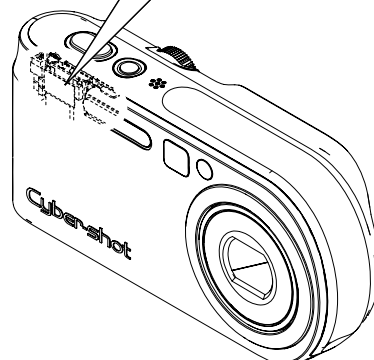
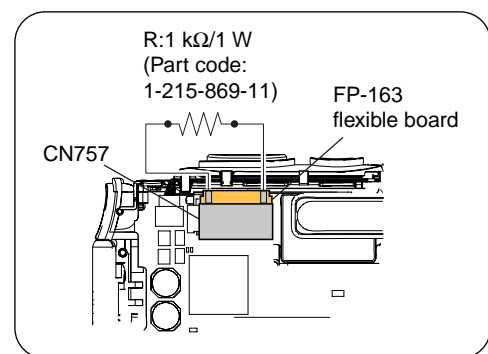
To preparing the short jig, a small clip is attached to each end of a resistor of 1 k $\Omega$  / 1 W (1-215-869-11).

Wrap insulating tape fully around the leads of the resistor to prevent electrical shock.



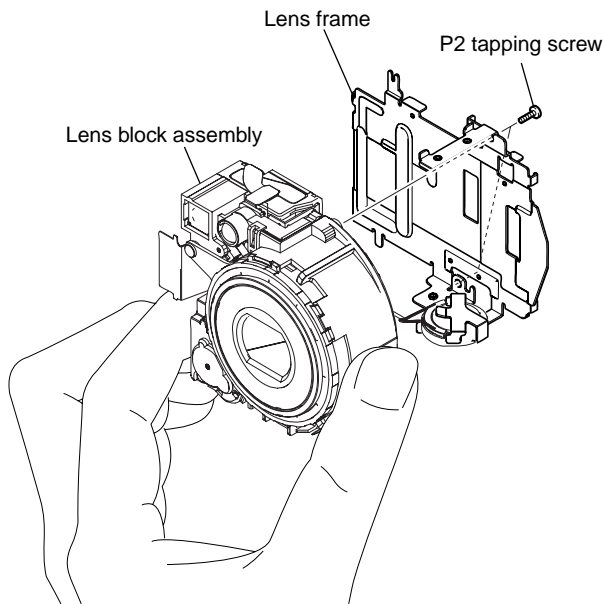
#### Discharging the Capacitor

Short-circuit between the positive and the negative terminals of charged capacitor with the short jig about 10 seconds.



1-3. NOTE IN LENS FRAME INSTALLATION

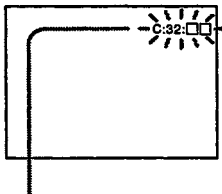
When tightening a screw, have both sides of the lens block assembly so as not for the load to depend.



1-4. DESCRIPTION ON SELF-DIAGNOSIS DISPLAY

Self-diagnosis display

The camera has a self-diagnosis display. This function displays the camera condition with five-digits (a combination of a letter and figures) on the LCD screen. If this occurs check the following code chart. The five-digits display informs you of the camera's current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.



Self-diagnosis display

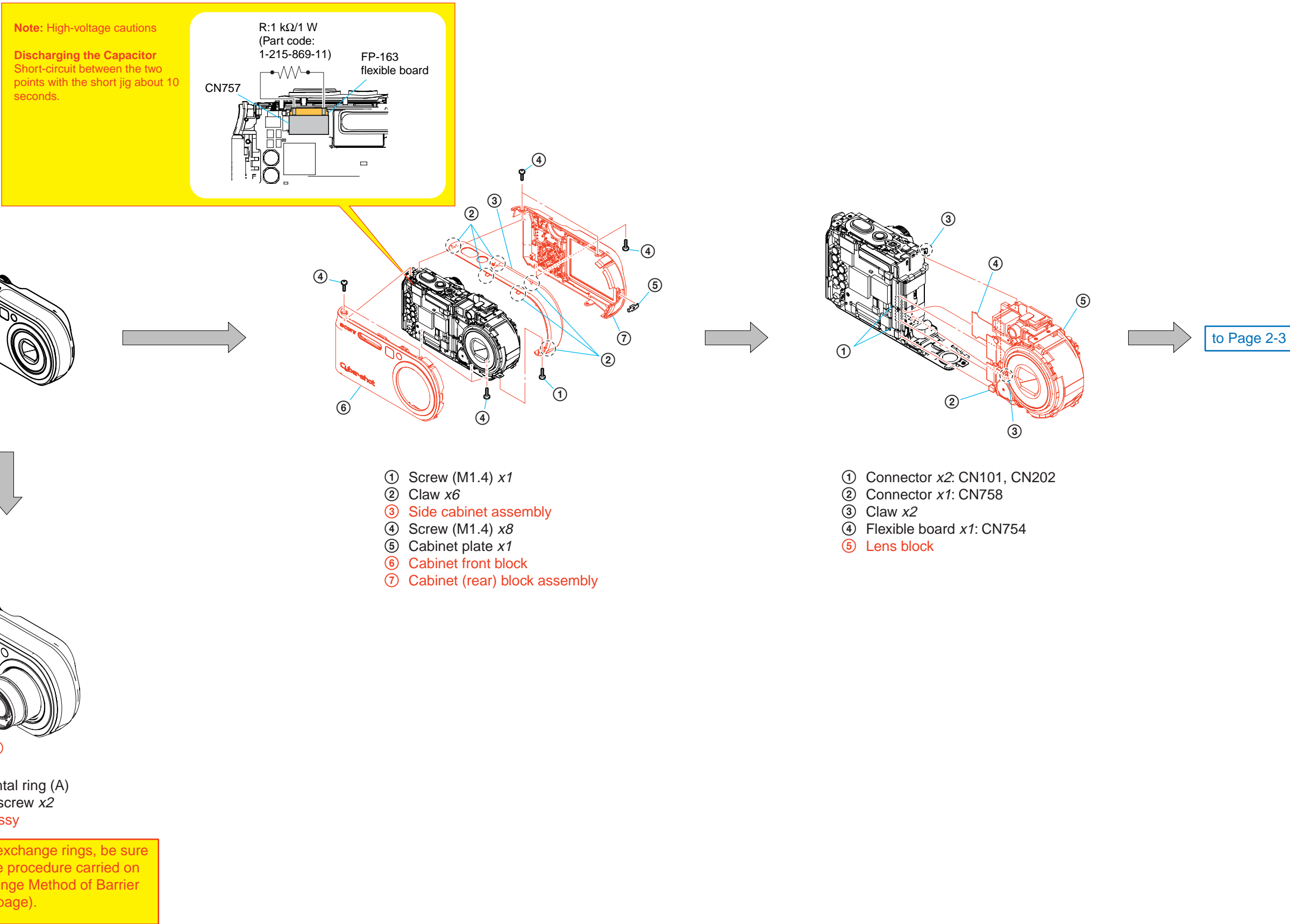
- C: □□: □□  
You can reverse the camera malfunction yourself. (However, contact your Sony dealer or local authorized Sony service facility when you cannot recover from the camera malfunction.)
- E: □□: □□  
Contact your Sony dealer or local authorized Sony service facility.

Display Code	Countermeasure	Cause	Caution Display During Error
C:32:□□	Turn the power off and on again.	Trouble with hardware.	SYSTEM ERROR
C:13:□□	Format the "Memory stick".	Unformatted memory stick is inserted.	FORMAT ERROR
	Insert a new "Memory Stick".	Memory stick is broken.	MEMORY STICK ERROR
E:61:□□	Checking of lens drive circuit.	When failed in the focus and zoom initialization.	—
E:91:□□	Checking of flash unit or replacement of flash unit.	Abnormality when flash is being charged.	

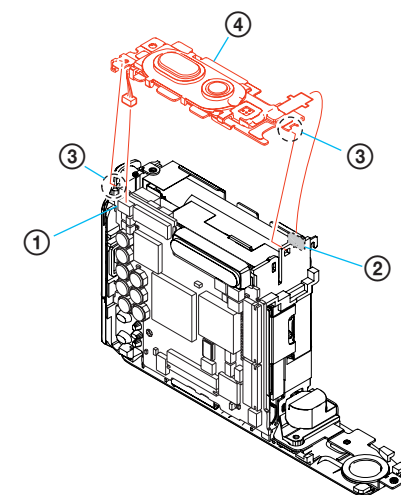
## 2. DISASSEMBLY

The following flow chart shows the disassembly procedure.

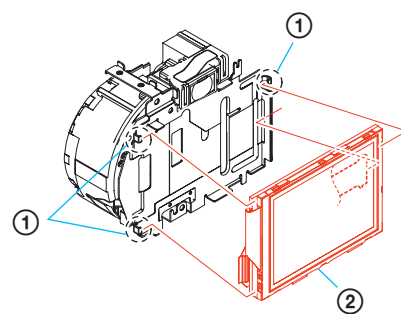
### 2-1. DISASSEMBLY



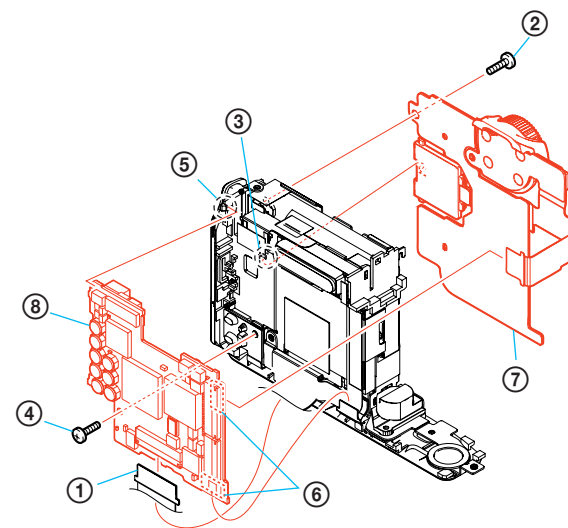
from Page 2-2



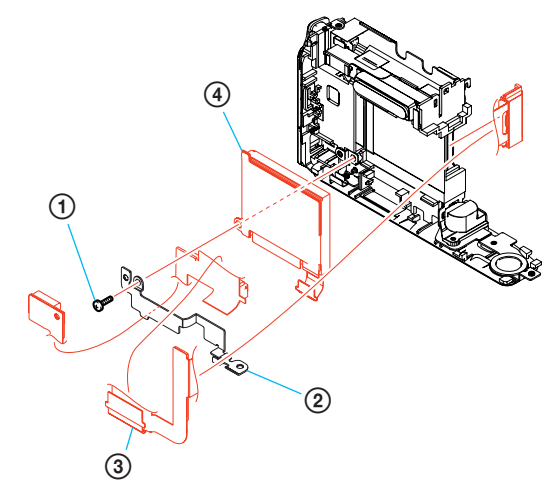
- ① Connector x1: CN707
- ② Connector x1: CN003
- ③ Claw x2
- ④ Control switch block



- ① Claw x3
- ② D901, LCD901



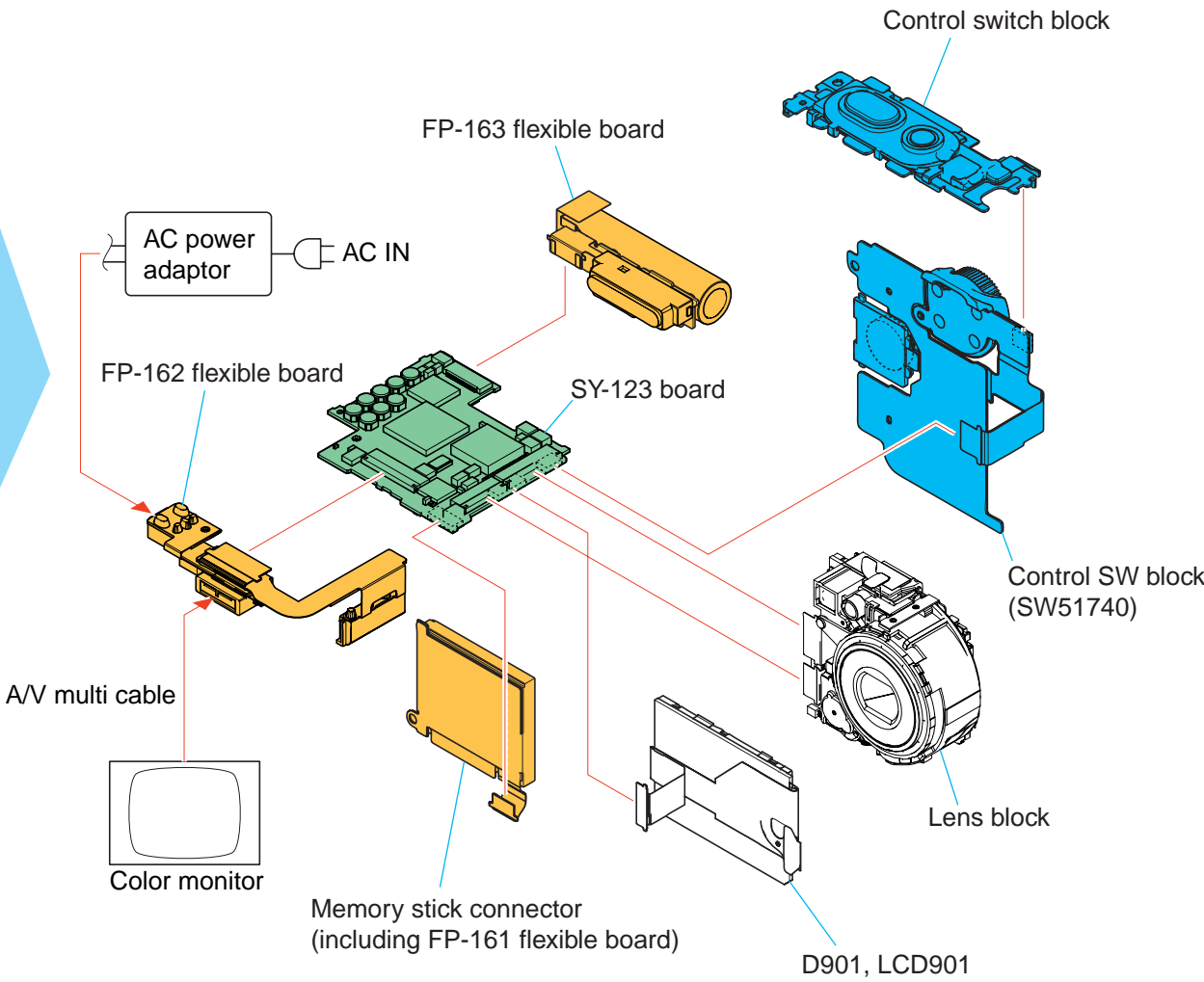
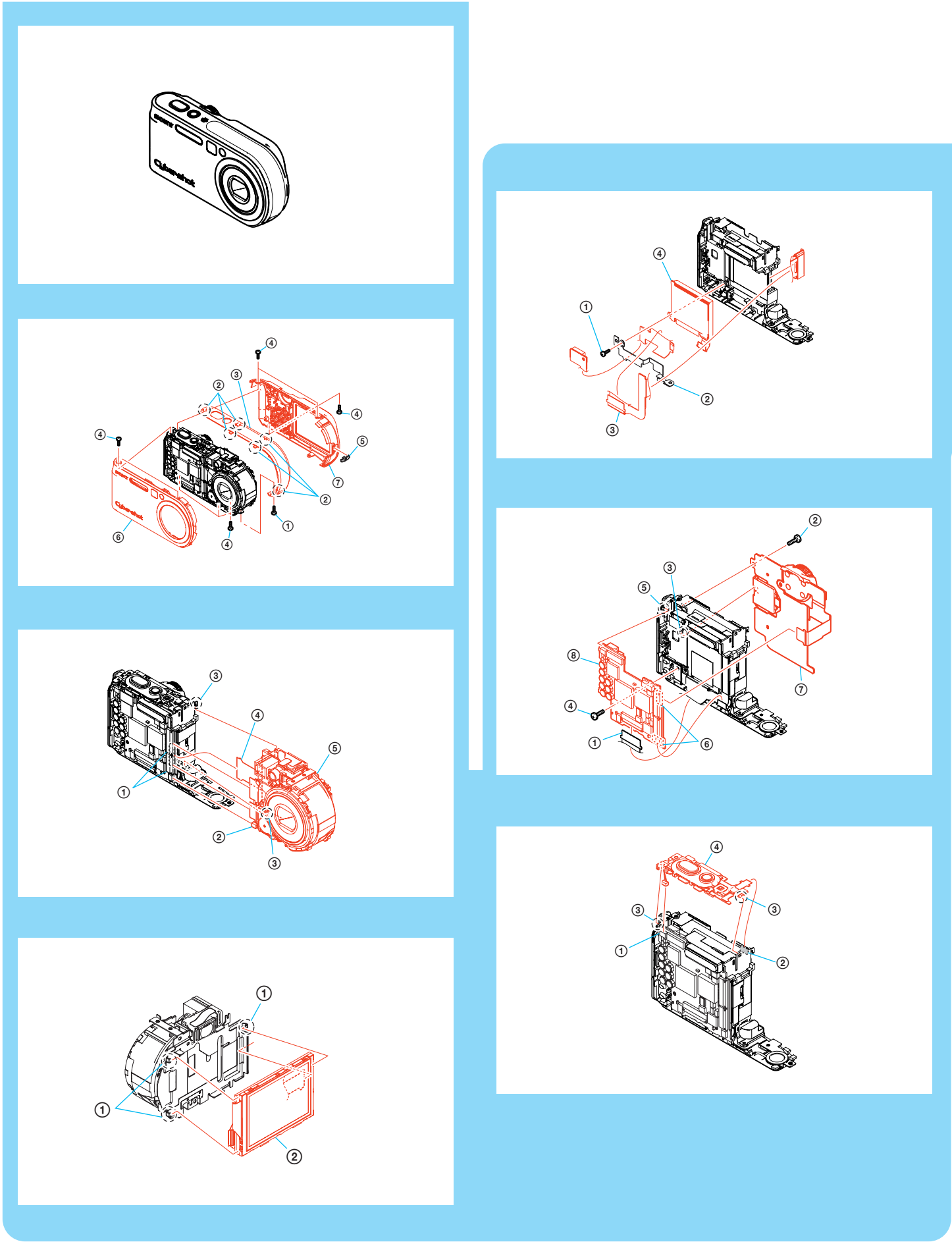
- ① Flexible board x1: CN704
- ② P2 tapping screw x1
- ③ Claw x1
- ④ P2 tapping screw (M1.7) x1
- ⑤ Claw x1
- ⑥ Connector x2: CN751, 756
- ⑦ Control SW block (SW51740)
- ⑧ SY-123 board



- ① P2 tapping screw x1
- ② Multi fixed plate x1
- ③ FP-162 flexible board
- ④ Memory stick connector



2-2. SY-123 BOARD SERVICE POSITION



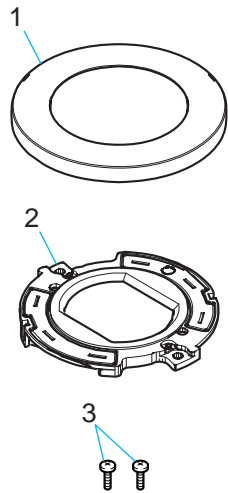
2-3. EXCHANGE METHOD OF BARRIER ASSY

Service parts

	Part Number	Part Name	Quantity
1	3-091-427-01	Ring (A), Ornamental	1
2	X-3954-476-1	Barrier Assy	1
3	3-086-156-31	Tapping screw (P2)	2

Tools used

Torque driver  
Soldering iron  
Weight about 60g  
Adhesive (Super X) (Note)  
**Note:** Use adhesive (Super X) or an equivalent article.  
Don't use what becomes white after drying like a quick-drying glue.

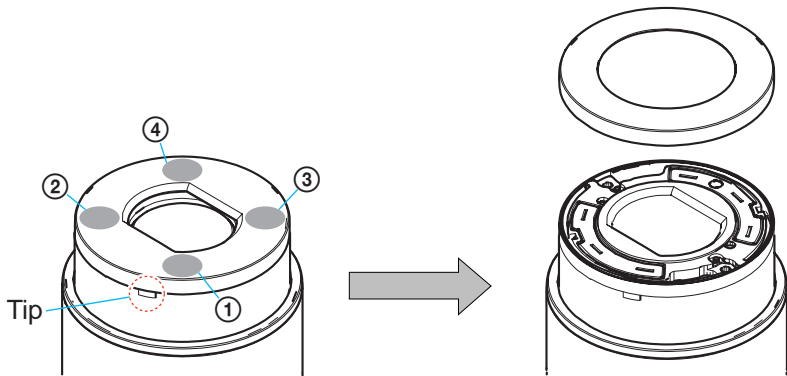


2-3-1. PEEL OFF OLD ORNAMENTAL RING A

The Ornamental Ring A has adhered to the Barrier Assy strongly and accordingly, use a soldering iron to weaken the adhesive force.  
Heat four circled portions with the soldering iron.  
Heating temperature is about 300°C.  
Beware of a burn since the entire Ornamental Ring becomes hot.  
\* As the adhesive force of Ornamental Ring A is considerably large, the forced peeling will damage the group-1 frame.

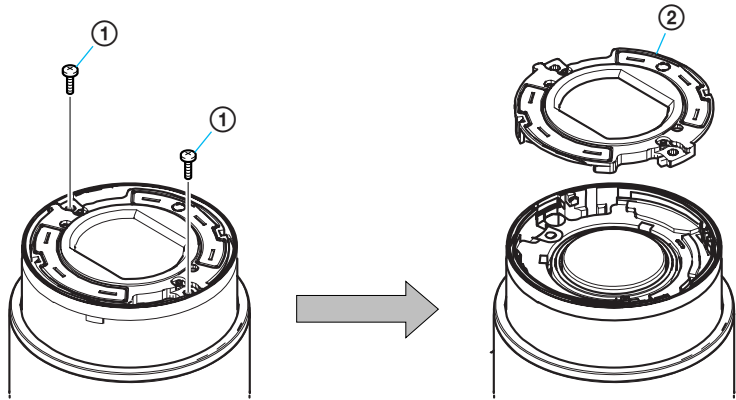
Insert the tip of tweezers, etc. into a notch of the group-1 frame and prize the ring.  
\* Take extreme care so as not to damage the coated surface of the group-1 frame.  
In case of difficult peeling, heat the ring again with the soldering iron.  
If this re-heating failed, it may be advisable that the ring be peeled while heating the portions ① → ② → ③ → ④ in the under figure one by one sequentially.

\* Discard the removed Ornamental Ring A.



2-3-2. REMOVE OLD BARRIER ASSY

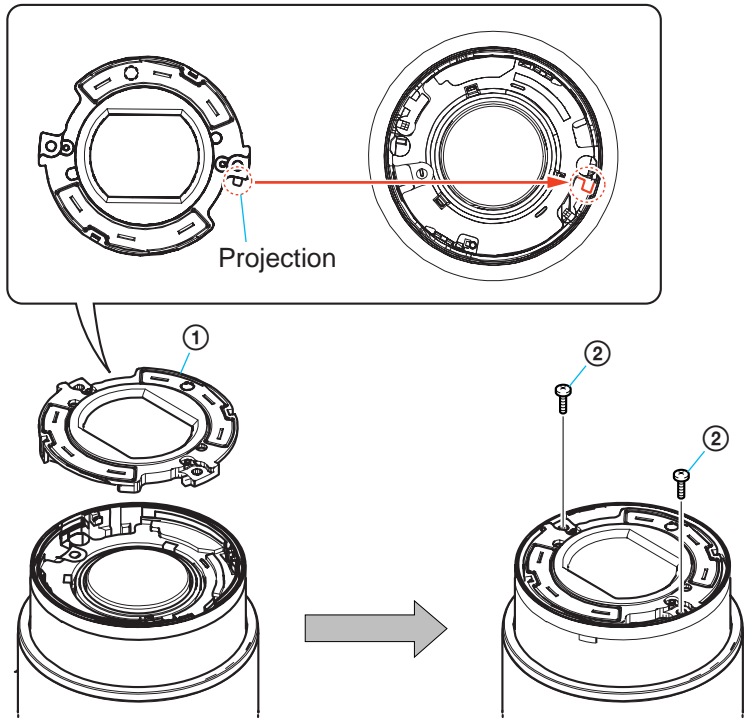
- ① Remove two screws.  
\* Discard the removed screws.
- ② Remove the Barrier Assy.  
\* Discard the removed Barrier Assy.



\* After removing the Barrier Assy, if the “G1 Dust-Proof Ring” was removed, it must be returned to the home position.  
In returning the ring, adjust the location of a projection to the lens direction.  
This is an important part to prevent the dust and light from coming in.  
\* After removing the Barrier Assy, take extreme care not to drop dust or foreign substances in the lens barrel.

2-3-3. INSTALL NEW BARRIER ASSY

- ① Install new Barrier Assy by paying attention to the projection of the Barrier Assy in relation to the position shown in the under figure.
- ② Tighten two screws.  
\* Tightening torque = 0.5 kgf (4.9 N)



### 2-3-4. ADHERE THE ORNAMENTAL RING A

Apply an adhesive to four recesses on the top surface of the Barrier Assy.

\* Do not apply too much adhesive. (Make quantity of adhesives into the quantity in which a groove hides.)

Meeting a “notch” of the Ornamental Ring A with a “projection” of the group-1 frame, push the Ornamental Ring A into the group-1 frame.

\* The projection of the spring for preventing static electricity must be tilted.

Put the 60g weight on the Ornamental Ring A so that the Ornamental Ring A does not float up until the adhesive hardens.

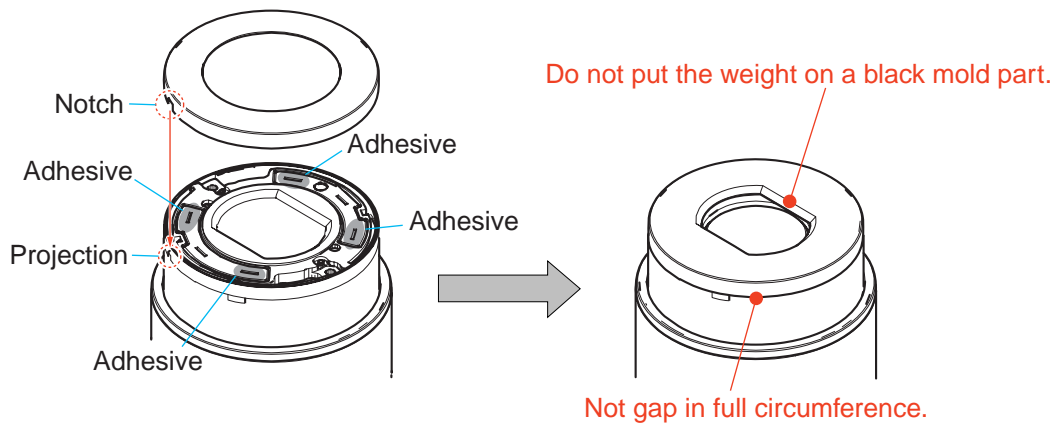
**Note:** Be careful not to give a shock.

\* After the weight was put, no gap must be present in full circumference between Ornamental Ring A and group-1 frame.

A gap, if present, causes the crackle sound NG.

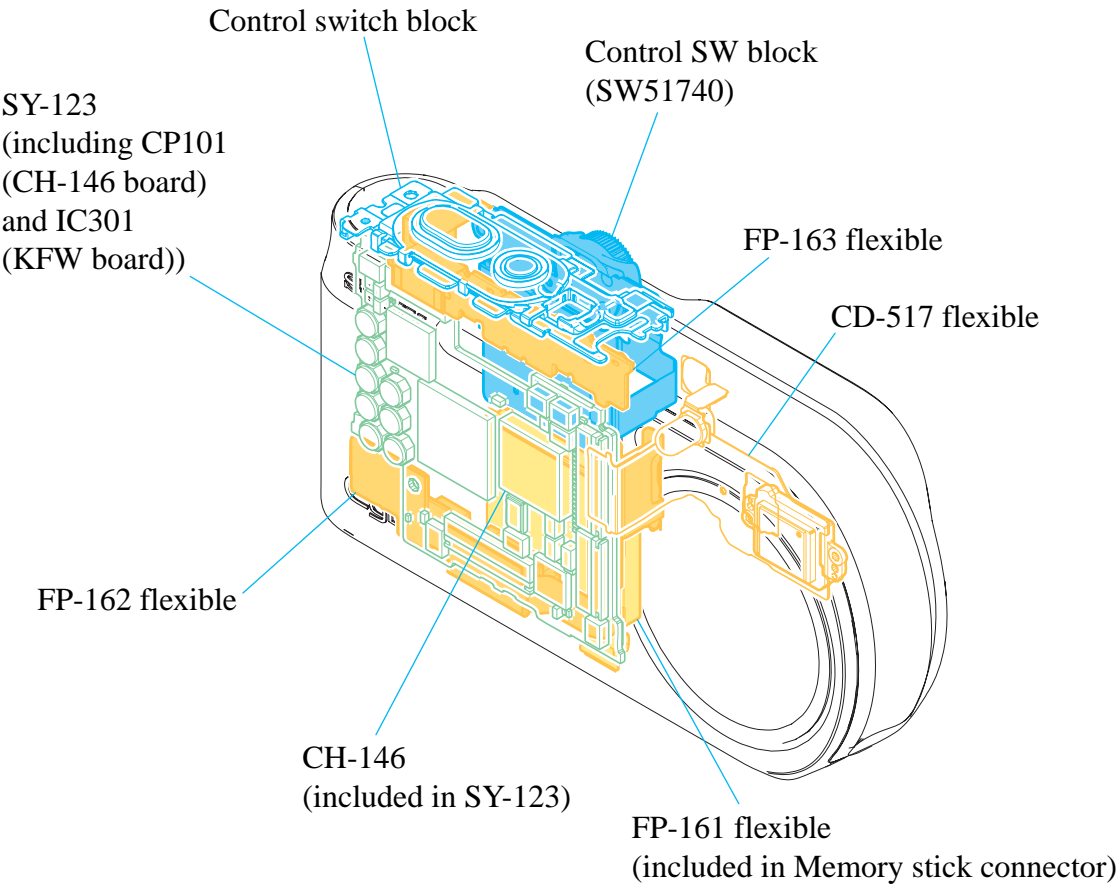
\* The weight must push in the Ornamental Ring A only.

If the weight is put on the mold part of the Barrier Assy, the Ornamental Ring A will float up.



Completion after 30 minutes.

2-4. CIRCUIT BOARDS LOCATION



Board Name	Function
CD-517 flexible	CCD IMAGER
CH-146 (included in SY-123)	CCD SIGNAL PROCESS
FP-161 flexible (included in Memory stick connector)	MEMORY STICK CONNECTOR
FP-162 flexible	DC IN, MULTI CONNECTOR
FP-163 flexible	FLASH
SY-123 (including CP-101 (CH-146 board) and IC301 (KWF board))	CAMERA MODULE, CAMERA DSP, LENS DRIVE, SH DSP, FRONT CONTROL, LCD DRIVE, AUDIO, DC/DC CONVERTER, CONNECTOR

### 3. BLOCK DIAGRAMS

Link

• OVERALL BLOCK DIAGRAM (1/2)

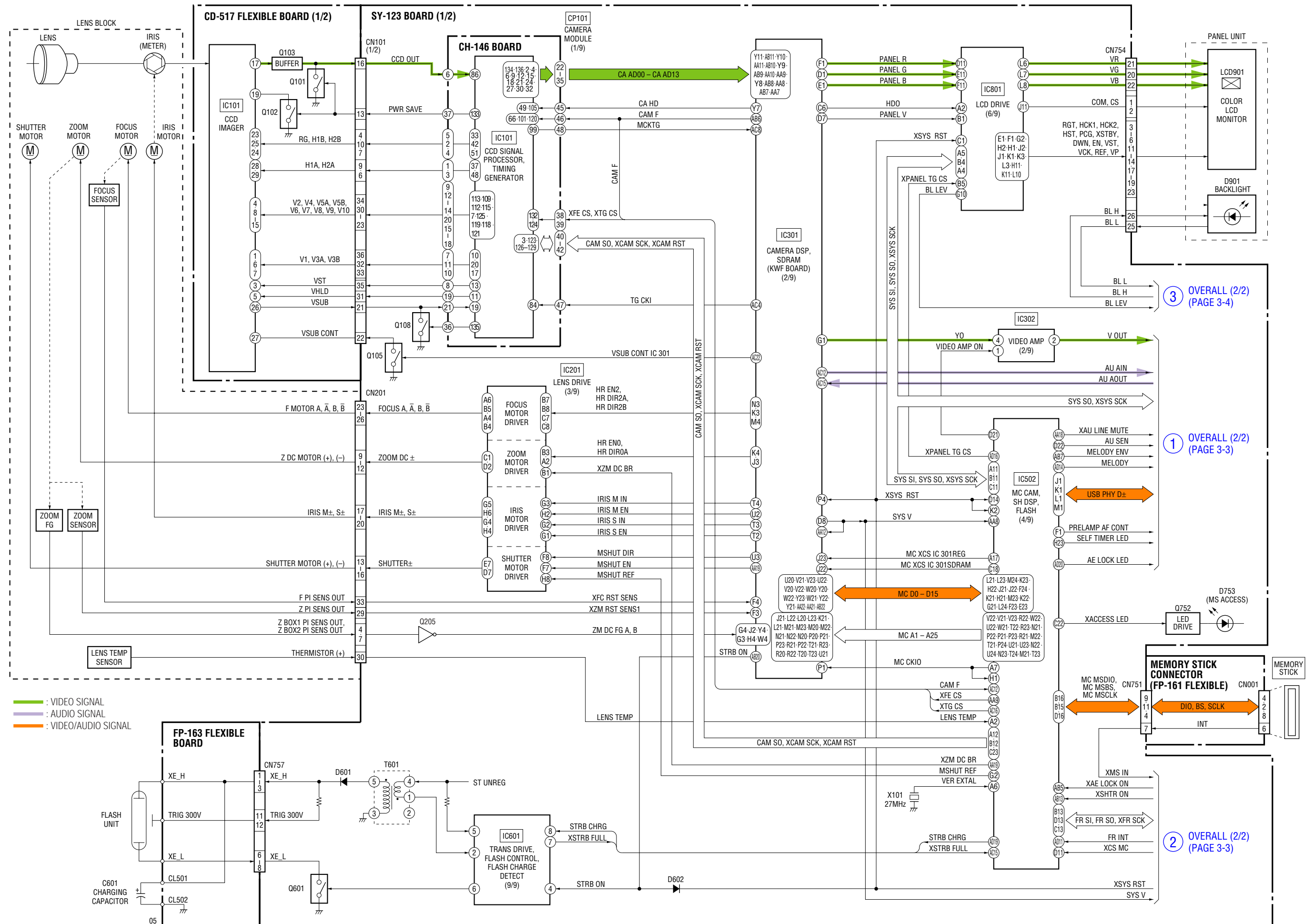
• POWER BLOCK DIAGRAM (1/2)

• OVERALL BLOCK DIAGRAM (2/2)

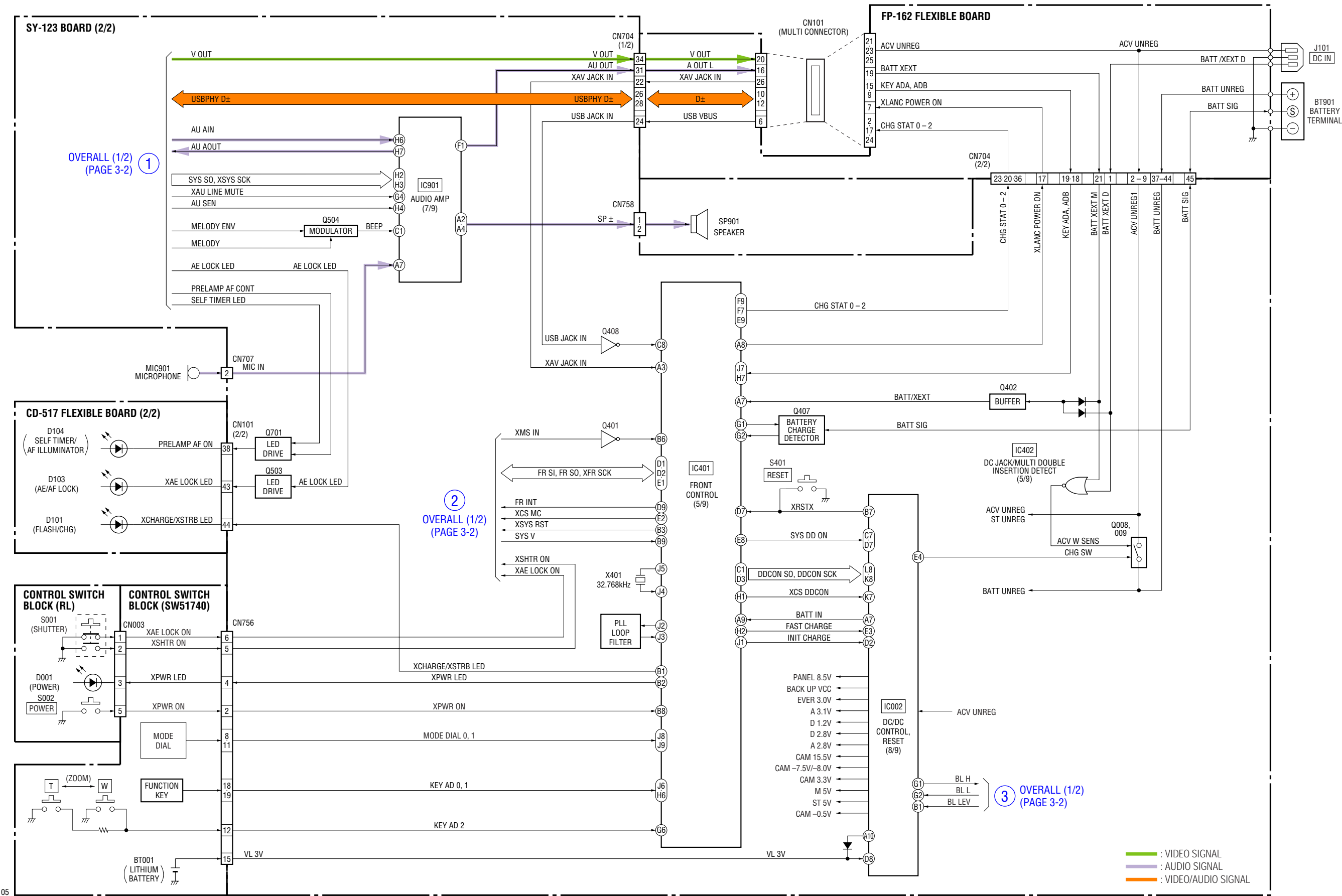
• POWER BLOCK DIAGRAM (2/2)

### 3. BLOCK DIAGRAMS

#### 3-1. OVERALL BLOCK DIAGRAM (1/2) ( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.

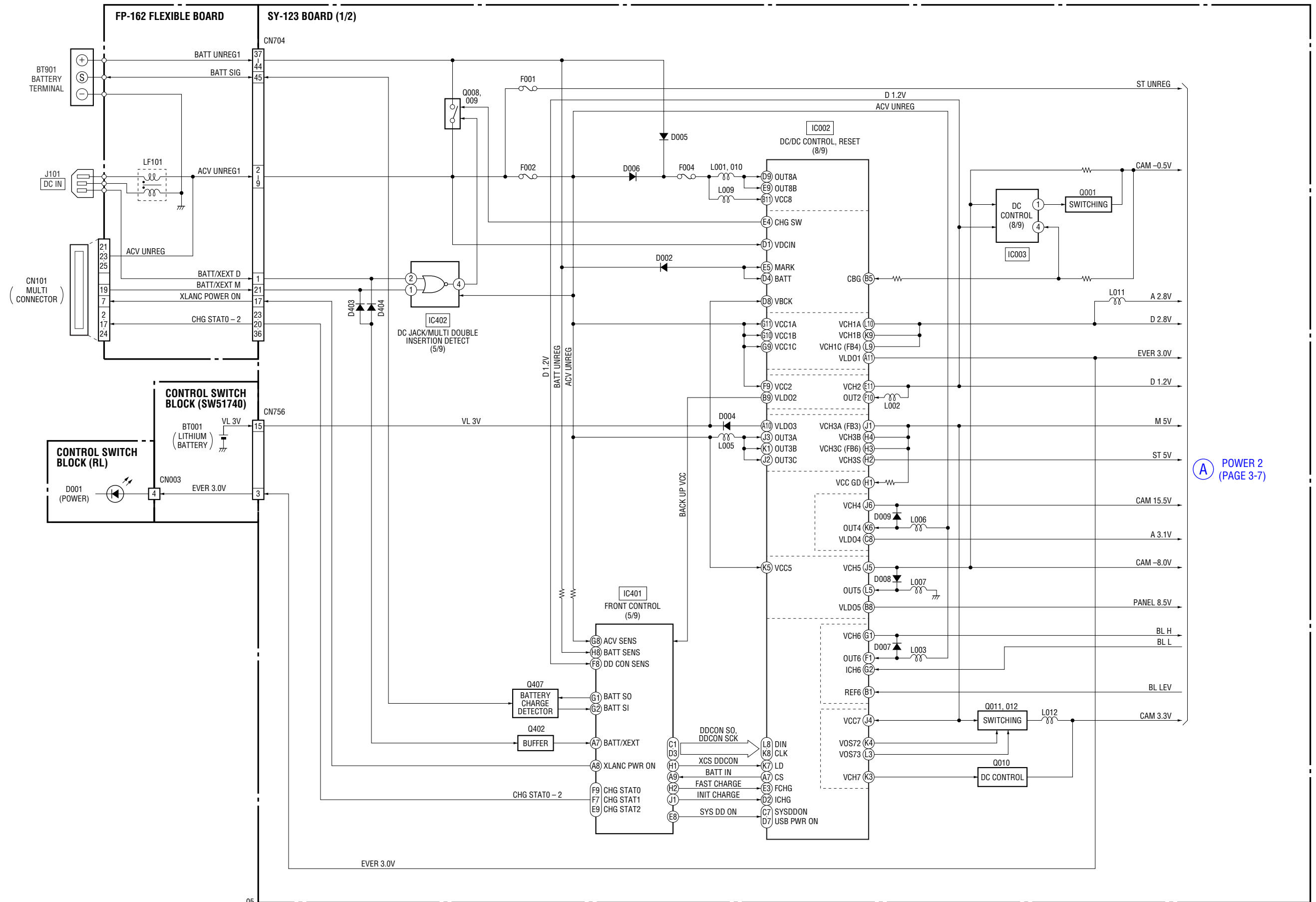


3-2. OVERALL BLOCK DIAGRAM (2/2) ( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



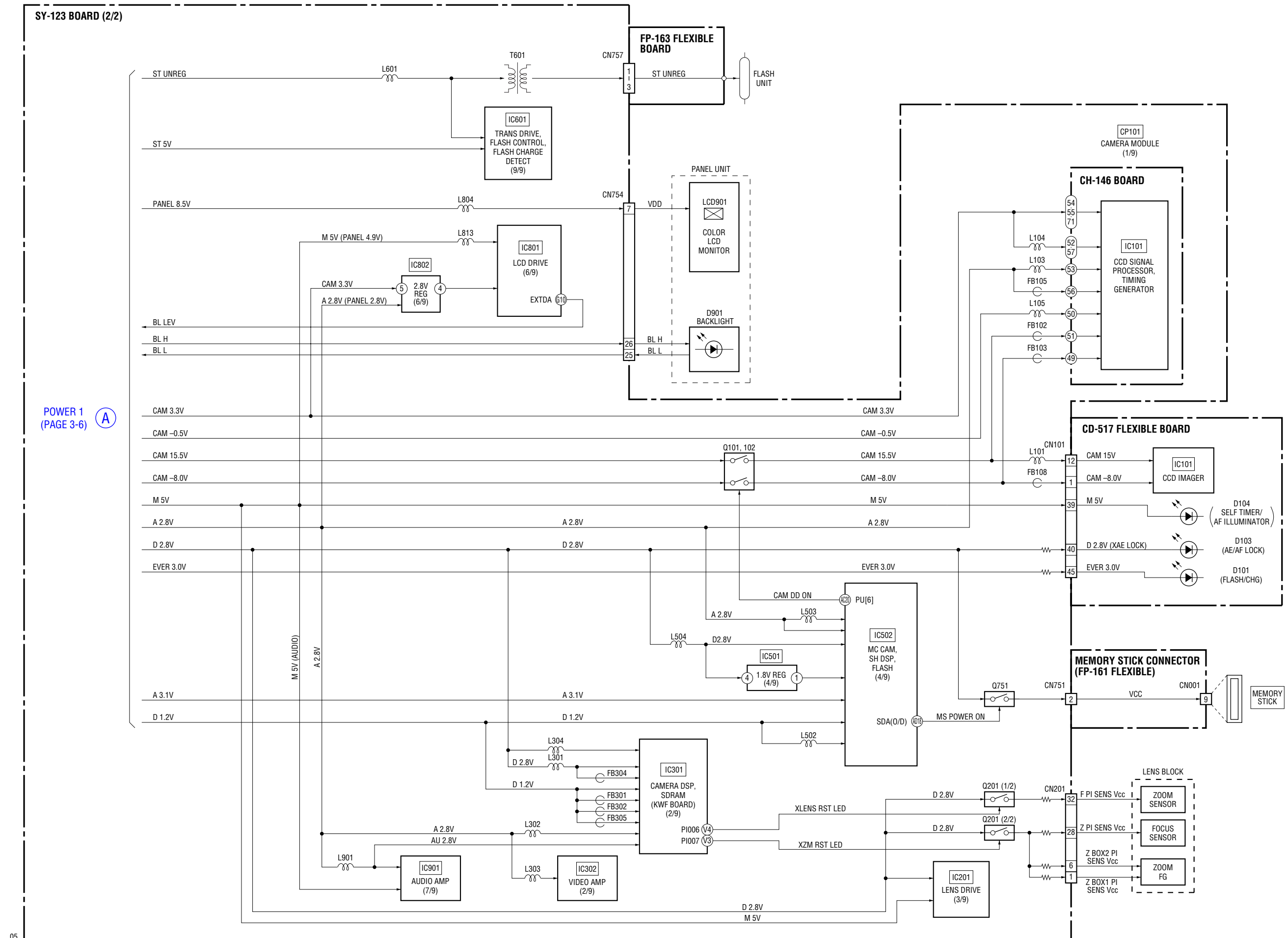


**3-3. POWER BLOCK DIAGRAM (1/2)** ( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



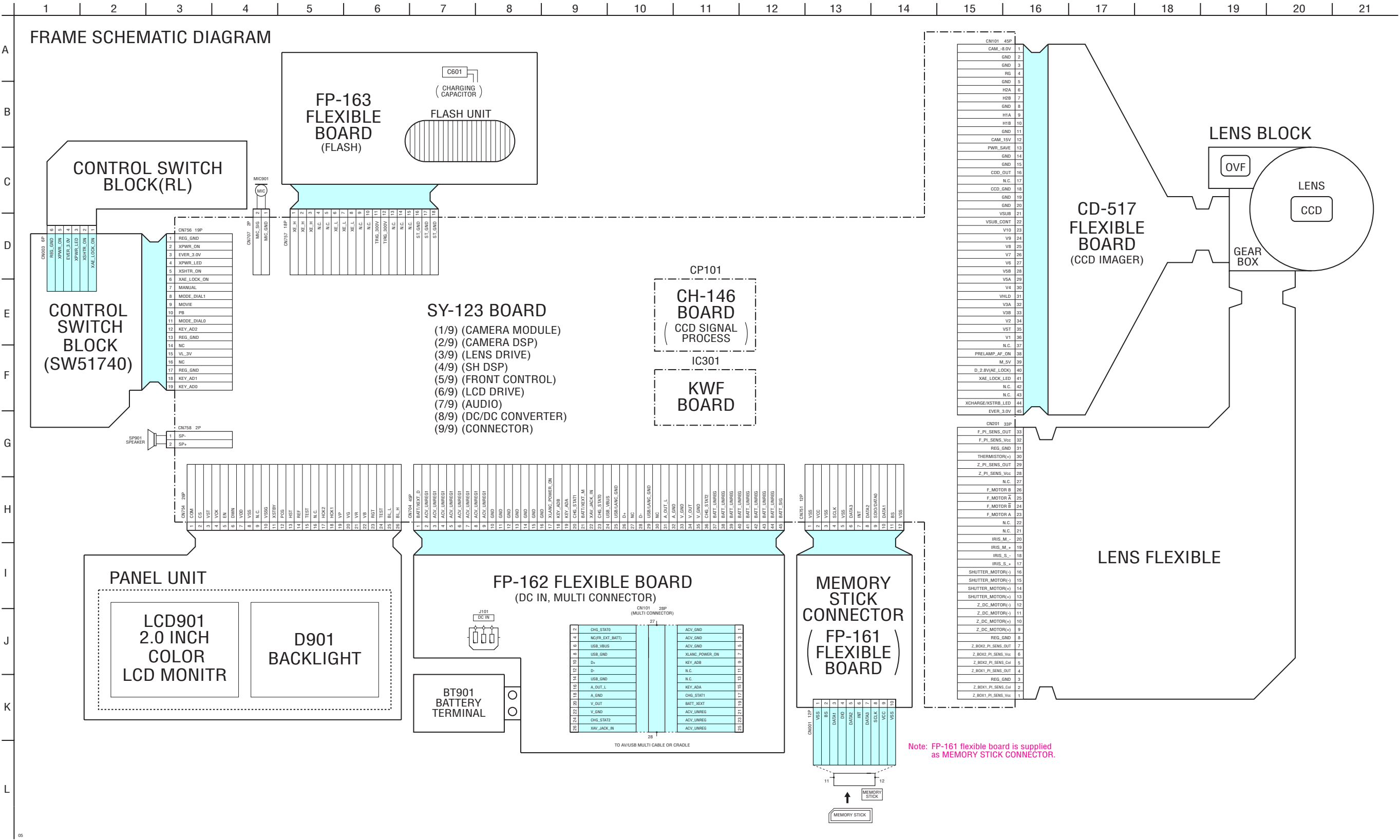


**3-4. POWER BLOCK DIAGRAM (2/2)** ( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



## 4-2. SCHEMATIC DIAGRAMS

### Link

- **CD-517 FLEXIBLE (CCD IMAGER)**

- **FP-163 FLEXIBLE BOARD (FLASH)**

- **FP-162 FLEXIBLE BOARD  
(DC IN, MULTI CONNECTOR)**

- **MEMORY STICK CONNECTOR  
(FP-161 FLEXIBLE)**

- **COMMON NOTE FOR SCHEMATIC DIAGRAMS**

## 4-2. SCHEMATIC DIAGRAMS

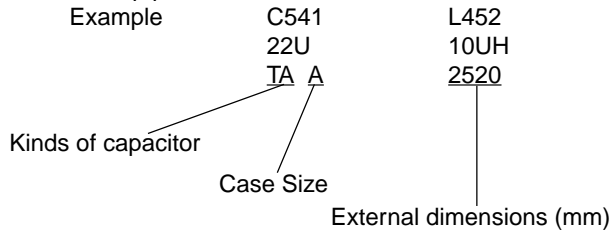
### 4-2. SCHEMATIC DIAGRAMS

#### THIS NOTE IS COMMON FOR SCHEMATIC DIAGRAMS

(In addition to this, the necessary note is printed in each block)

##### (For schematic diagrams)

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$  :  $\mu\text{F}$ . 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted.  $\text{k}\Omega=1000 \Omega$ ,  $\text{M}\Omega=1000 \text{k}\Omega$ .
- Caution when replacing chip parts.  
New parts must be attached after removal of chip.  
Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

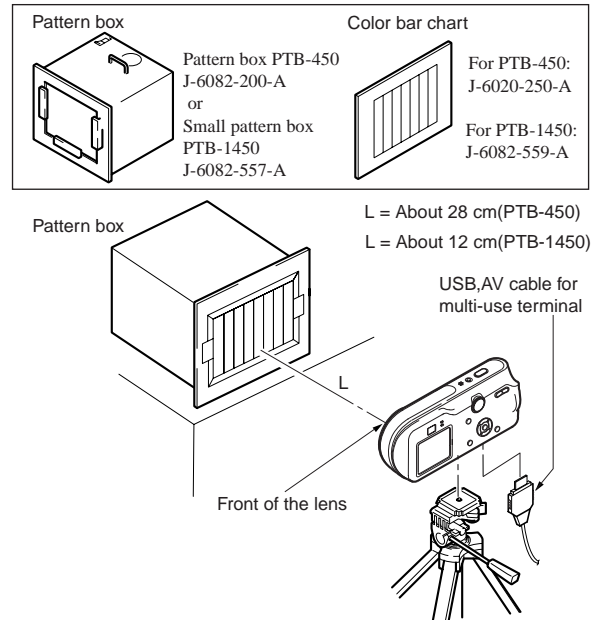


- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.  
In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination. Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name  
XEDIT → EDIT      PB/XREC → PB/REC
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B- Line
- : IN/OUT direction of (+,-) B LINE.
- : adjustment for repair.
- : not use circuit
- Circled numbers refer to waveforms.

##### (Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms.  
(VOM of DC 10  $\text{M}\Omega$  input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)

#### 1. Connection



#### 2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

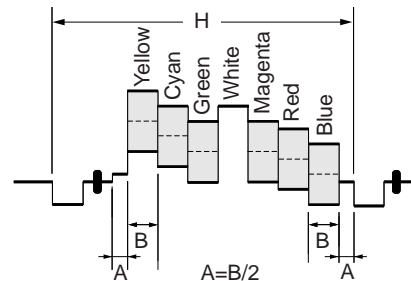


Fig. a (Video output terminal output waveform)

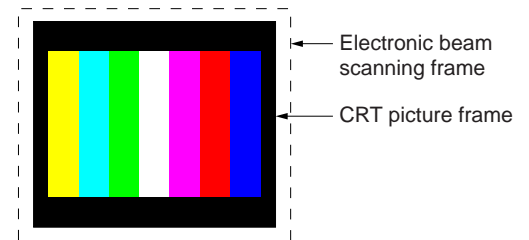


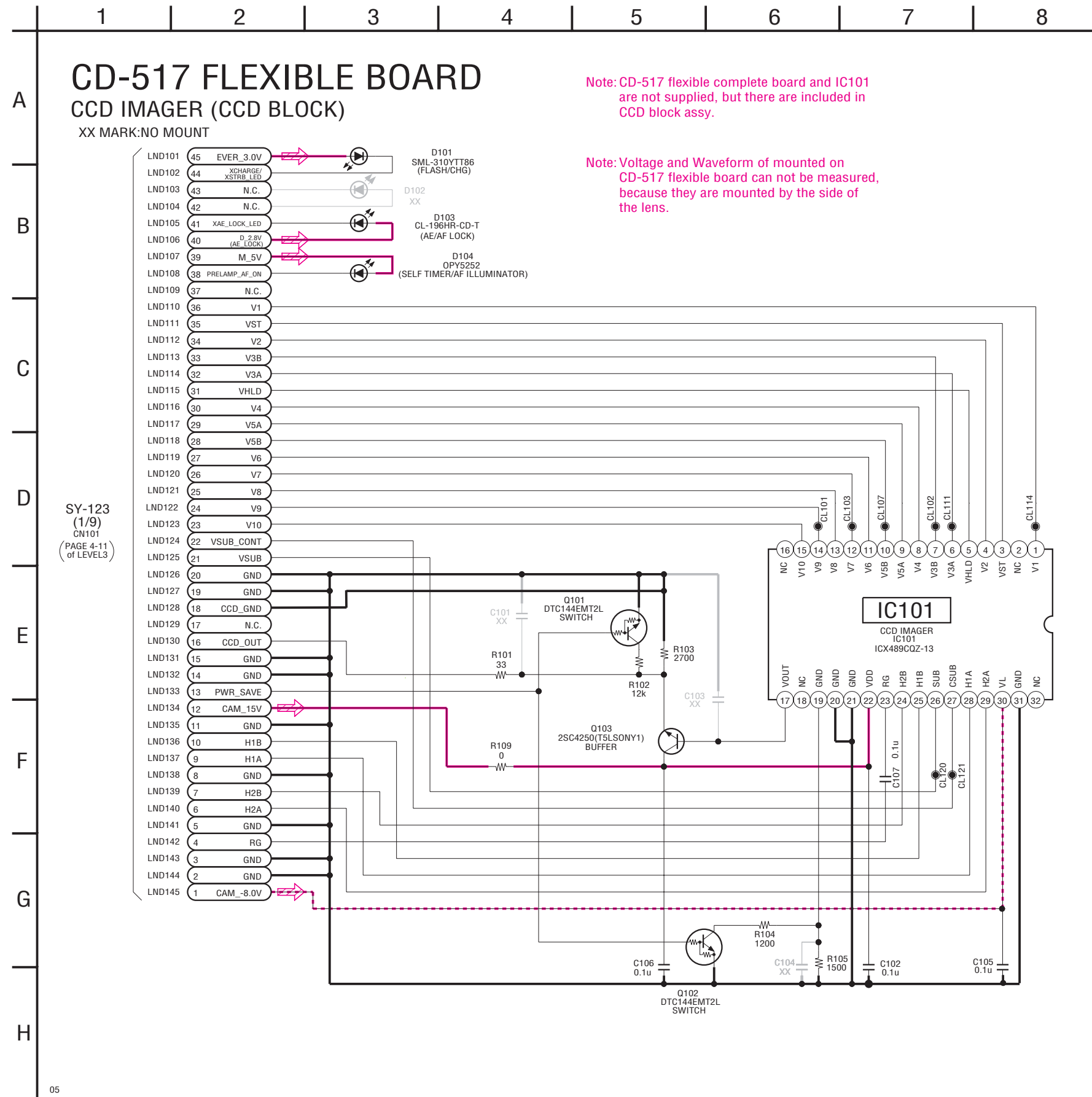
Fig.b (Picture on monitor TV)

When indicating parts by reference number, please include the board name.

**Note :** The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

**Note :** Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Refer to page 4-37 for printed wiring board.




### Precautions for Replacement of CCD Imager

- The CD-517 flexible board mounted as a repair part is not equipped with a CCD imager.  
When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC.  
In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

Schematic diagrams of the CH-146, SY-123 boards are not shown.  
Pages from 4-9 to 4-28 are not shown.

- Refer to page 4-43 for printed wiring board.



Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.





## 4-3. PRINTED WIRING BOARDS

### Link






• CD-517 FLEXIBLE BOARD	• FP-163 FLEXIBLE BOARD
• FP-162 FLEXIBLE BOARD	
• COMMON NOTE FOR PRINTED WIRING BOARDS	
• MOUNTED PARTS LOCATION	• CIRCUIT BOARDS LOCATION

Board Name	Function
CD-517 flexible	CCD IMAGER
FP-162 flexible	DC IN, MULTI CONNECTOR
FP-163 flexible	FLASH

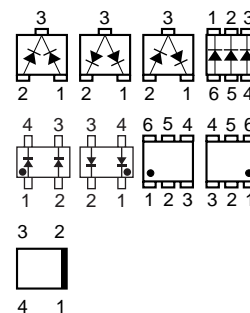
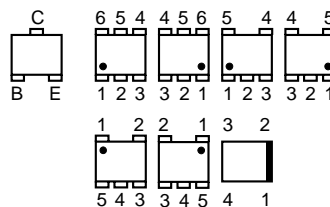
### 4-3. PRINTED WIRING BOARDS

### 4-3. PRINTED WIRING BOARDS

**THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS**

-  : Uses unleaded solder.
  -  : Circuit board
  -  : Flexible board
- Pattern from the side which enables seeing.
-  : pattern of the rear side  
(The other layers' patterns are not indicated)
- Through hole is omitted.
  - Circled numbers refer to waveforms.
  - There are a few cases that the part printed on diagram isn't mounted in this model.
  -  : panel designation

- Chip parts.  
Transistor



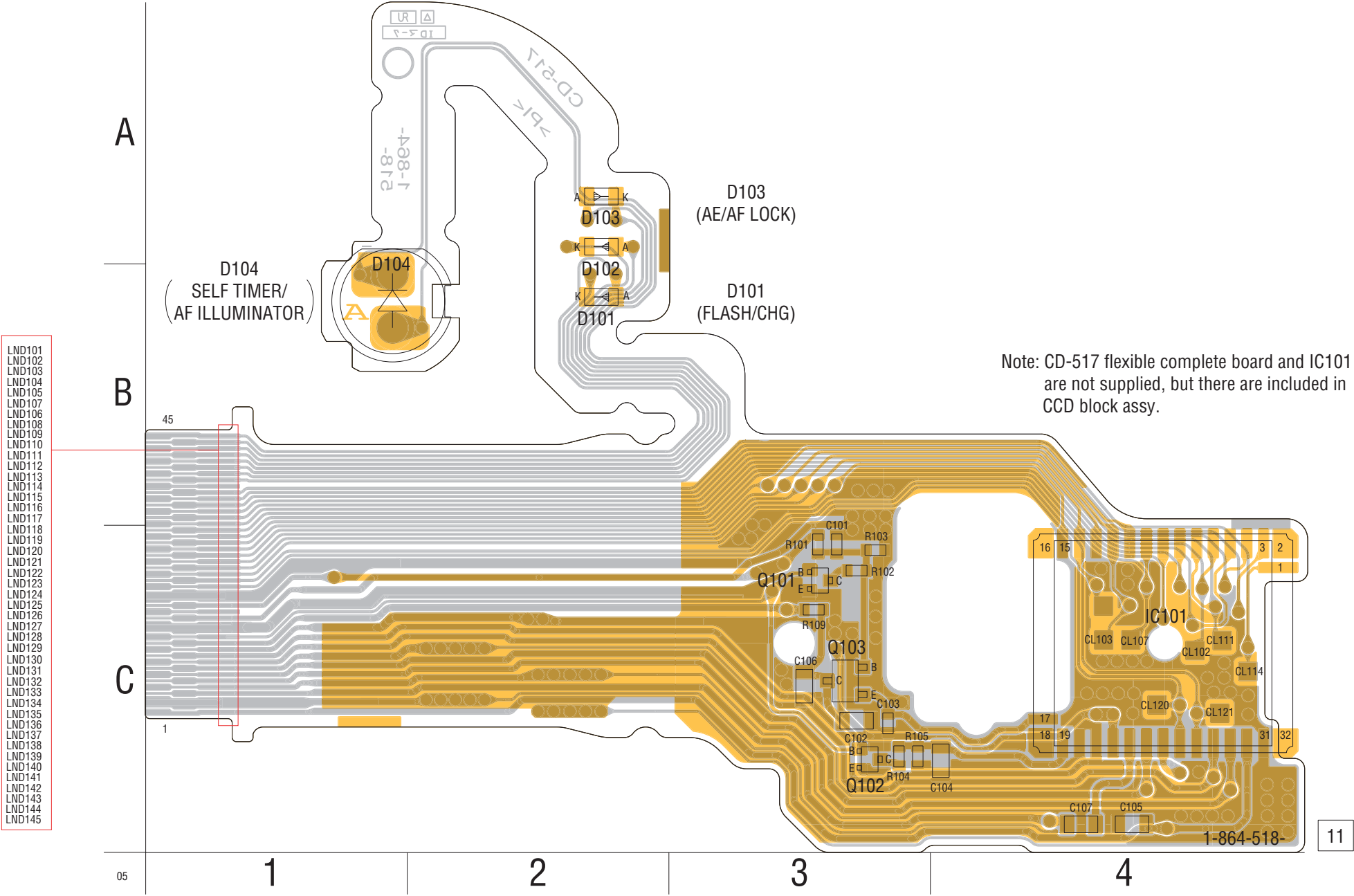
Board Name	Parts Location (Shown on Page)	Pattern	
		Total Number of Layers	Layers Not Indicated
CD-517 flexible	4-47	2 layers	–
FP-162 flexible	–	2 layers	–
FP-163 flexible	–	1 layer	–

CD-517 FLEXIBLE

Note for Printed Wiring Board (See page 4-35).

 : Uses unleaded solder.

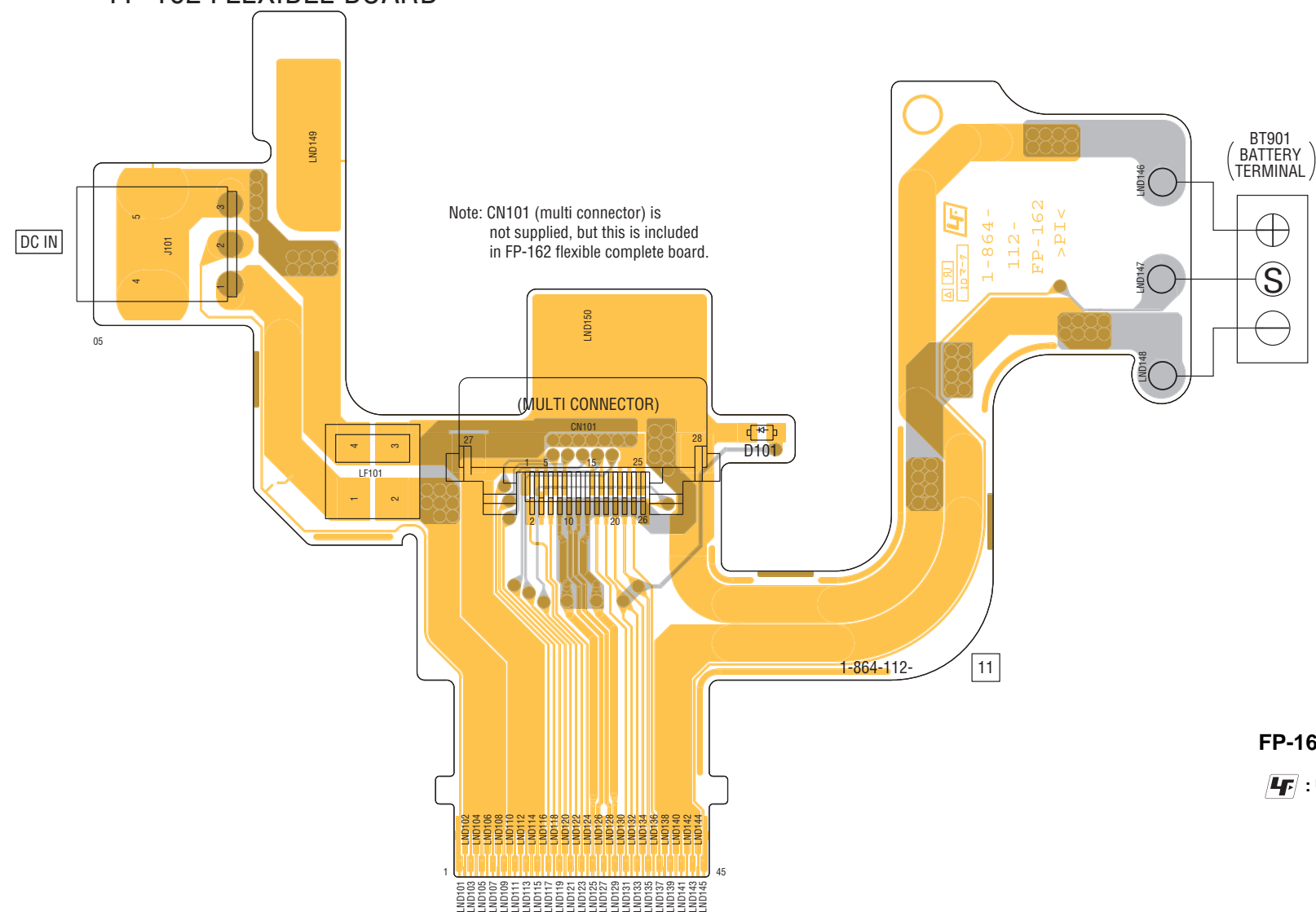
CD-517 FLEXIBLE BOARD



Printed wiring boards of the CH-146, SY-123 boards are not shown.  
Pages from 4-39 to 4-42 are not shown.

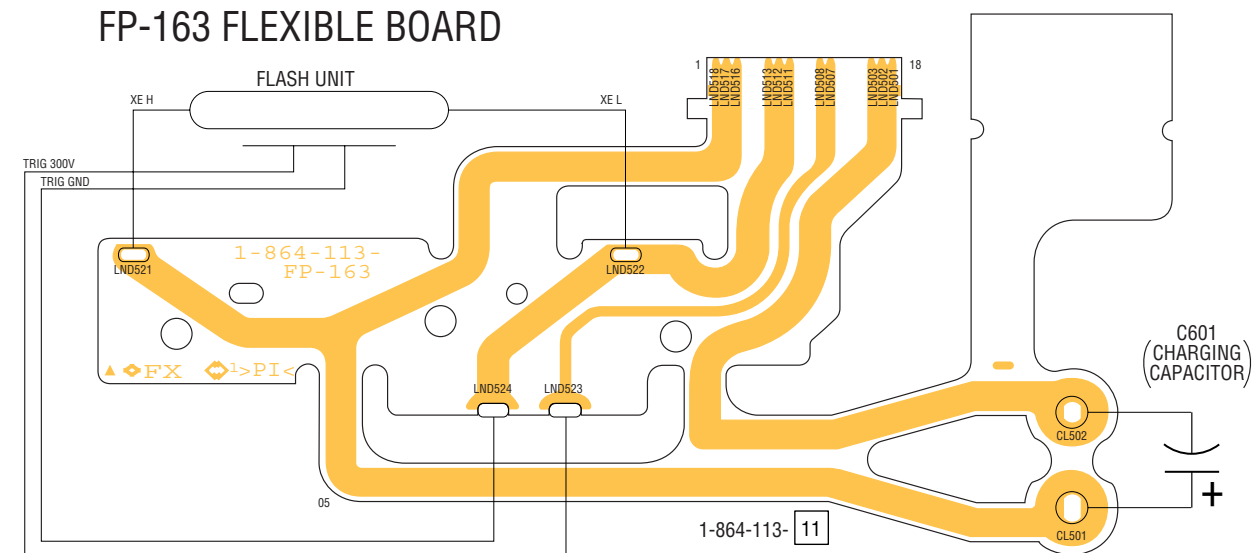
**FP-162 FLEXIBLE**

## FP-162 FLEXIBLE BOARD



**LF** : Uses unleaded solder.

## FP-163 FLEXIBLE BOARD



DSC-P200

Waveforms of the SY-123 board are not shown.  
Pages 4-45 and 4-46 are not shown.

### 4-5. MOUNTED PARTS LOCATION

no mark : side A  
\* mark : side B

#### CD-517 FLEXIBLE BOARD

C102 C-3  
C105 C-4  
C106 C-3  
C107 C-4

D101 B-2  
D103 A-2  
D104 B-1

IC101 C-4

Q101 C-3  
Q102 C-3  
Q103 C-3

R101 C-3  
R102 C-3  
R103 C-3  
R104 C-3  
R105 C-3  
R109 C-3

Mounted parts location of the CH-146 and SY-123 boards are not shown.  
Page 4-48 and 4-49 are not shown.




# 5. REPAIR PARTS LIST

NOTE: Characters **A** to **Z** of the electrical parts list indicate location of exploded views in which the desired part is shown.

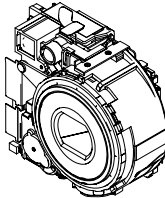
Link

EXPLODED VIEWS



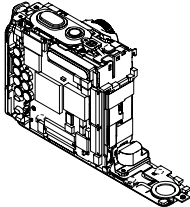
**A**

OVERALL ASSEMBLY



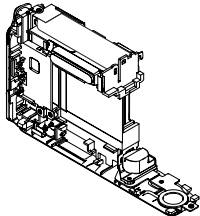
**B**

LENS BLOCK ASSEMBLY



**C**

MAIN BLOCK ASSEMBLY



**D**

BT BLOCK ASSEMBLY

Link

ELECTRICAL PARTS LIST

ACCESSORIES

<a href="#">CD-517 FLEXIBLE BOARD</a> <b>B</b>	<a href="#">FP-162 FLEXIBLE BOARD</a> <b>C</b>	
<a href="#">FP-161 FLEXIBLE BOARD</a> <b>C</b>	<a href="#">FP-163 FLEXIBLE BOARD</a> <b>D</b>	

## 5. REPAIR PARTS LIST

### 5. REPAIR PARTS LIST

#### NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- CAPACITORS:  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H
- RESISTORS  
All resistors are in ohms.  
METAL: metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F: nonflammable
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$ A..., uPA...,  $\mu$ PA...,  
uPB...,  $\mu$ PB...,  $\mu$ PC...,  $\mu$ PC...,  
uPD...,  $\mu$ PD...
- Abbreviation  
AR : Argentina model  
AUS : Australian model  
BR : Brazilian model  
CH : Chinese model  
CND: Canadian model  
HK : Hong Kong model  
JE : Tourist model  
KR : Korean model

When indicating parts by reference number, please include the board name.

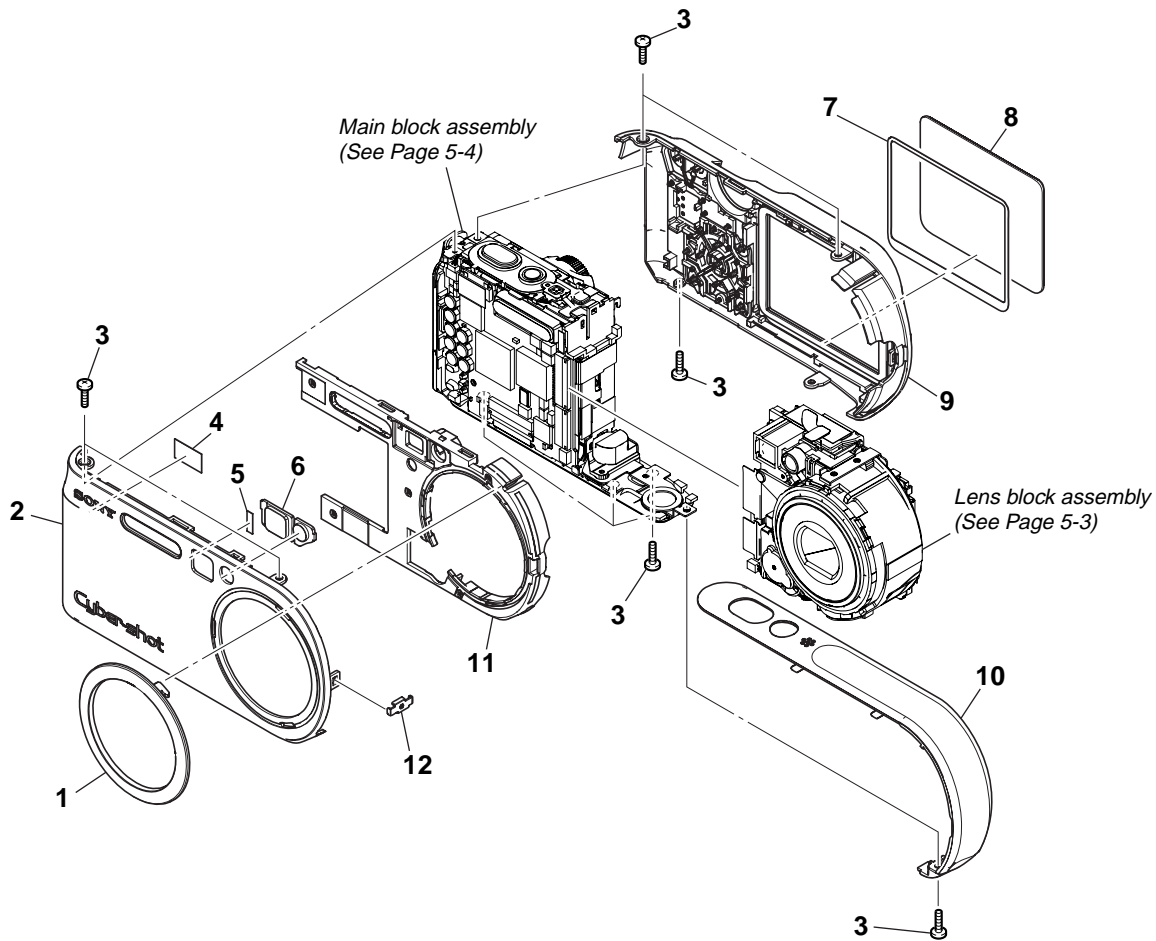
The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

## 5. REPAIR PARTS LIST

### 5-1. EXPLODED VIEWS

#### 5-1-1. OVERALL ASSEMBLY

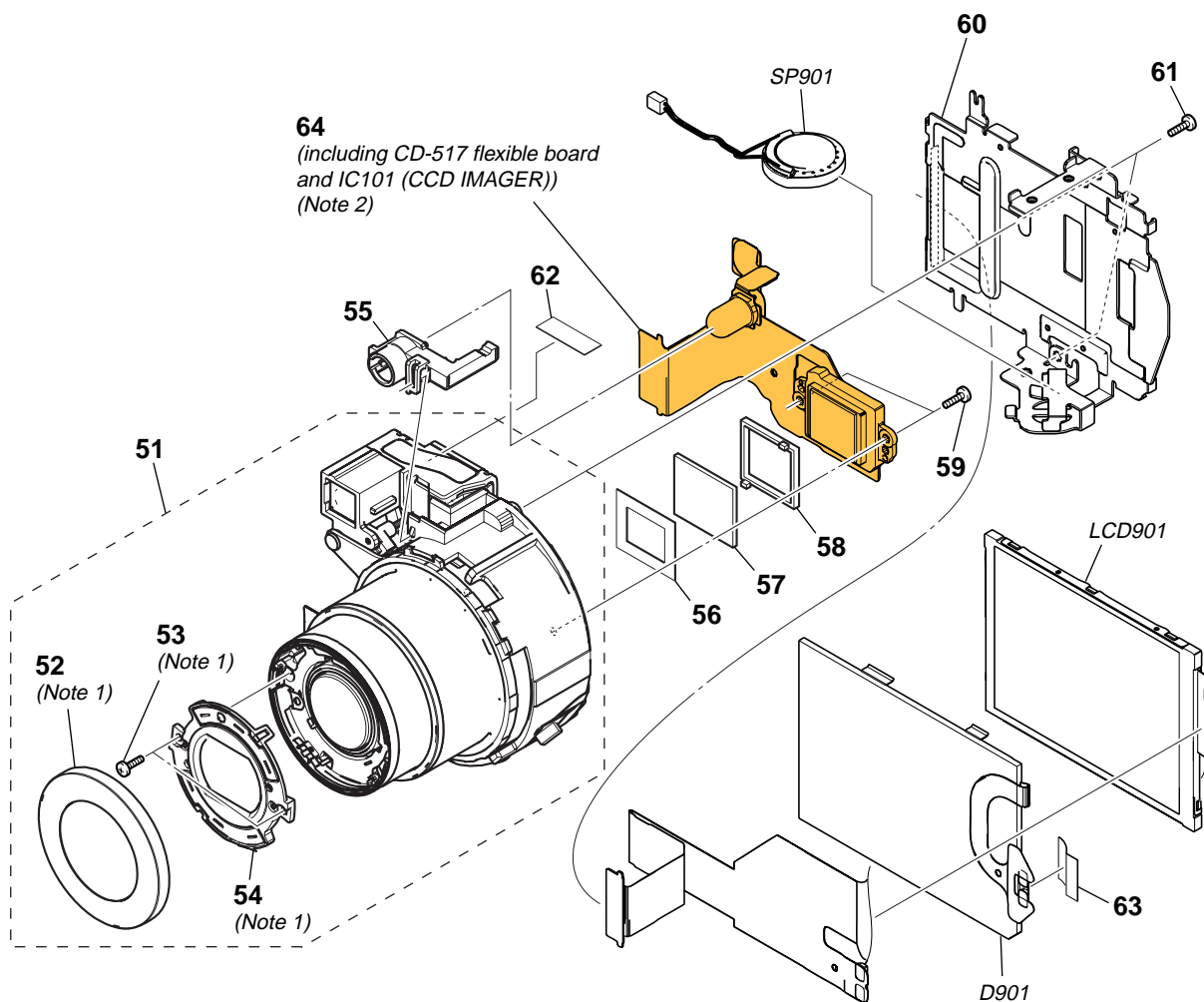


Ref. No.	Part No.	Description
1	2-547-040-01	RING, LENS
2	2-547-038-01	CABINET (FRONT (SD)) (SILVER)
2	2-547-038-11	CABINET (FRONT (SD)) (BLACK)
2	2-547-038-21	CABINET (FRONT (SD)) (BROWN)
3	2-587-151-01	SCREW (M1.4), NEW TRUSTAR.P2
4	2-582-197-01	SHEET (FRONT), ADHESIVE
5	2-582-196-01	SHEET, OVF WINDOW ADHESIVE
6	2-582-195-01	WINDOW, OVF

Ref. No.	Part No.	Description
7	2-582-186-01	SHEET, LCD WINDOW ADHESIVE
8	2-582-185-01	WINDOW, LCD
9	A-1097-047-A	CABINET (REAR) BLOCK ASSY (SILVER)
9	A-1097-048-A	CABINET (REAR) BLOCK ASSY (BLACK)
9	A-1097-049-A	CABINET (REAR) BLOCK ASSY (BROWN)
10	X-2048-862-1	CABINET ASSY, SIDE
11	2-582-194-01	CABINET (FRONT), INNER
12	2-582-184-01	PLATE, CABINET

## 5. REPAIR PARTS LIST

### 5-1-2. LENS BLOCK ASSEMBLY



Note 1: Be sure to read "2-3. Exchange Method of Barrier Assy" on page 2-7 when change Ref. No. 52, 53 and 54.

Note 2: Be sure to read "Precautions for Replacement of CCD Imager" on page 4-8 when changing the CCD imager.

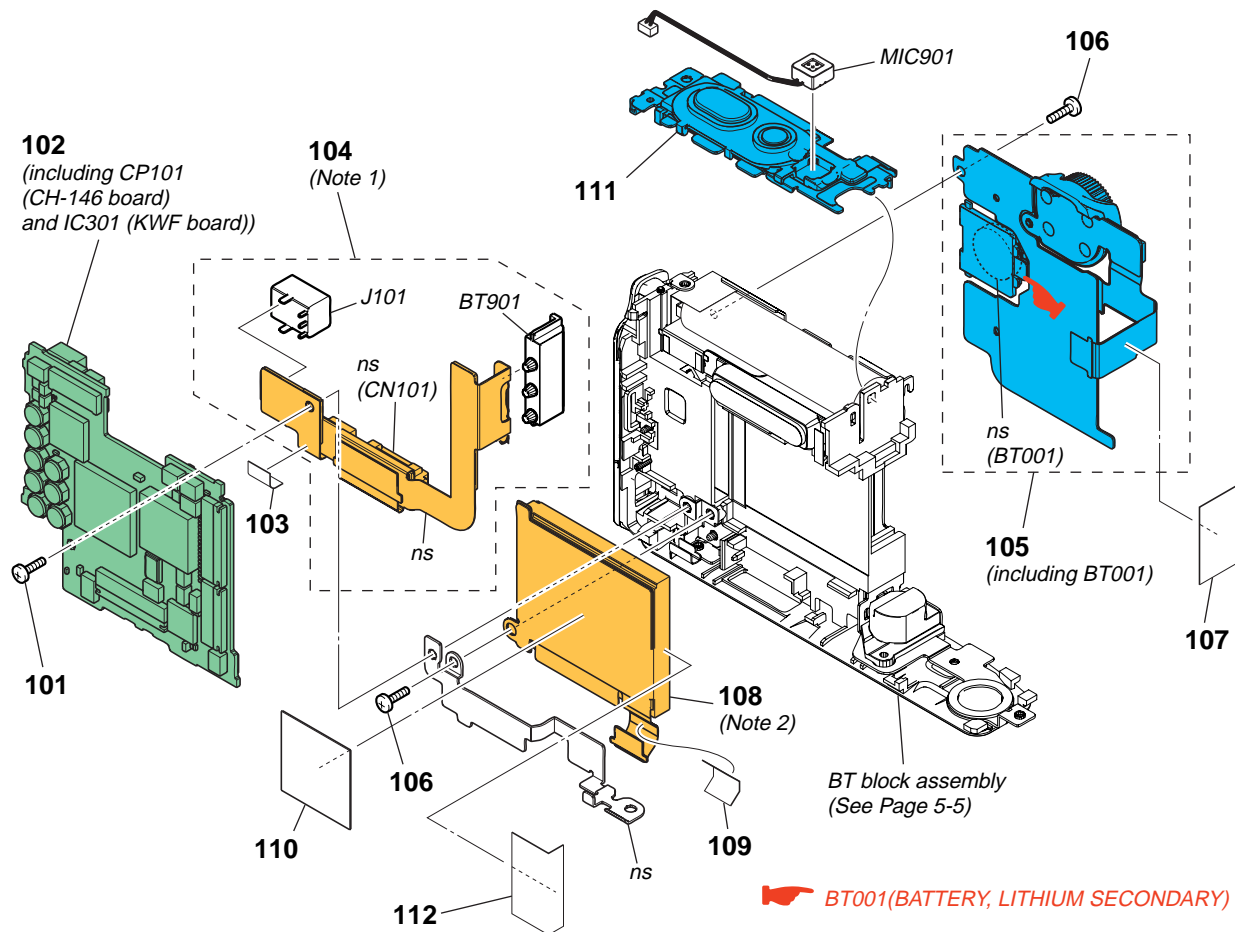
Ref. No.	Part No.	Description
51	1-788-208-11	LENS, VIDEO (EC01B)
52	3-091-427-01	RING (A), ORNAMENTAL (Note1)
53	3-086-156-31	SCREW, TAPPING (P2) (Note1)
54	X-3954-476-1	BARRIER ASSY (Note1)
55	3-091-013-01	HOLDER, AF
56	2-021-317-01	MASK, LPF
57	1-788-176-11	OPTICAL FILTERBLOCK (OFB-02-21)
58	2-021-318-01	SEALGOM 890
59	3-348-998-61	SCREW (M1.4X4), TAPPING, PAN

Ref. No.	Part No.	Description
60	2-582-219-01	FRAME, LENS
61	3-080-204-11	SCREW, TAPPING, P2
62	2-589-437-01	GUARD (CD), FLEXIBLE
63	2-582-218-01	SHEET, BL HARNESS PROTECTION
64	A-1089-498-A	CCD BLOCK ASSY (including CD-517 flexible board and IC101 (CCD IMAGER)) (Note2)
D901	1-479-010-11	BLOCK, LIGHT GUIDE PLATE (2.0)
LCD901	8-753-228-05	ACX335AK-3
SP901	1-825-923-31	LOUDSPEAKER (1.3CM)

## 5. REPAIR PARTS LIST

### 5-1-3. MAIN BLOCK ASSEMBLY

ns: not supplied



BT001(BATTERY, LITHIUM SECONDARY)

**CAUTION**  
Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type.

Note 1: CN101 (multi connector) is not supplied, but this is included in FP-162 flexible complete board.

Note 2: Part of 108 is including FP-161 flexible board.

The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

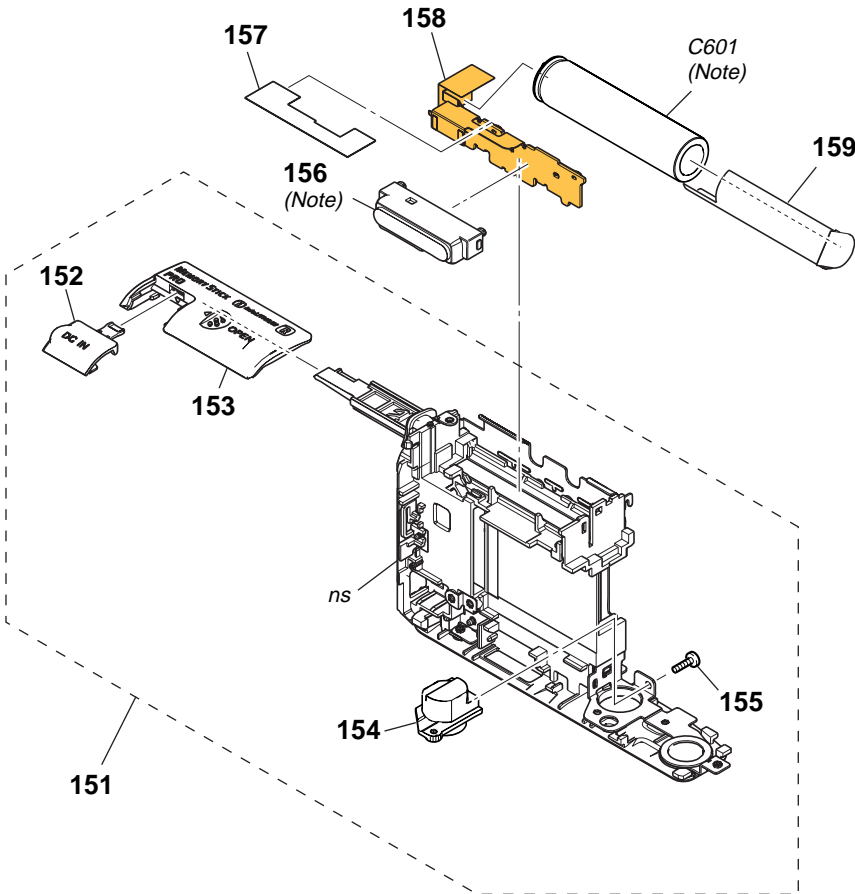
Ref. No.	Part No.	Description
101	3-080-222-31	SCREW (M1.7), TAPPING, P2
102	A-1107-528-A	SY-123 BOARD, COMPLETE (SERVICE) (including CP101 (CH-146 board) and IC301 (KWF board)) (E)
102	A-1107-529-A	SY-123 BOARD, COMPLETE (SERVICE) (including CP101 (CH-146 board) and IC301 (KWF board)) (HK, KR, CH, JE)
102	A-1107-533-A	SY-123 BOARD, COMPLETE (SERVICE) (including CP101 (CH-146 board) and IC301 (KWF board)) (US, CND, AUS)
102	A-1107-534-A	SY-123 BOARD, COMPLETE (SERVICE) (including CP101 (CH-146 board) and IC301 (KWF board)) (AEP, UK)
103	2-582-200-01	SHEET, JK

Ref. No.	Part No.	Description
104	A-1086-398-A	FP-162 FLEXIBLE BOARD, COMPLETE (Note 1)
105	1-479-099-11	CONTROL SW BLOCK (SW51740) (Including BT001)
106	3-080-204-11	SCREW, TAPPING, P2
107	2-582-202-01	SHEET, CCD RADIATION
108	1-819-094-11	CONNECTOR, MEMORY STICK 10P (Note 2)
109	2-582-205-01	SHEET, MS RADIATION
110	2-590-642-01	SHEET, SY RADIATION
111	1-479-100-11	SWITCH BLOCK, CONTROL
112	2-592-676-01	MS SPACER
BT901	1-780-141-21	BATTERY TERMINAL BOARD
J101	1-817-331-11	DC JACK 5P (DC IN)
MIC901	1-542-623-11	MICROPHONE UNIT

## 5. REPAIR PARTS LIST

### 5-1-4. BT BLOCK ASSEMBLY

ns: not supplied



Note: FLASH UNIT and C601 are not included in FP-163 flexible board.

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description
151	X-2048-864-1	HOLDER ASSY, BATTERY (SILVER)
151	X-2048-866-1	HOLDER ASSY, BATTERY (BLACK)
151	X-2048-867-1	HOLDER ASSY, BATTERY (BROWN)
152	2-547-035-01	LID, DC JACK (SILVER)
152	2-547-035-11	LID, DC JACK (BLACK)
152	2-547-035-21	LID, DC JACK (BROWN)
153	2-547-036-01	LID, BATTERY (SILVER)
153	2-547-036-11	LID, BATTERY (BLACK)
153	2-547-036-21	LID, BATTERY (BROWN)

Ref. No.	Part No.	Description
154	2-582-212-01	SCREW, TRIPOD
155	2-587-151-01	SCREW (M1.4), NEW TRUSTAR.P2
$\triangle$ 156	1-478-674-11	FLASH UNIT (Note)
157	2-582-204-01	SHEET, STROBOSCOPE INSULATING
$\triangle$ 158	1-864-113-11	FP-163 FLEXIBLE BOARD
159	2-590-582-01	SHEET, CAPACITOR INSULATING
$\triangle$ C601	1-100-969-11	CAP, ELECT 117uF

315V  
(Note)

**CD-517****FP-161****FP-162****FP-163****5-2. ELECTRICAL PARTS LIST**

Ref. No.	Part No.	Description
	A-1089-498-A	CCD BLOCK ASSY
	(Not supplied)	CD-517 FLEXIBLE BOARD, COMPLETE
		*****
		(CCD block assy is including CD-517 flexible board and IC101 (CCD imager).)
		< CAPACITOR >
C102	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C105	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C106	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C107	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
		< DIODE >
D101	8-719-077-34	DIODE SML-310YTT86 (FLASH/CHG)
D103	8-719-075-29	DIODE SML-510MWT86S (AE/AF LOCK)
D104	6-500-505-01	DIODE OPY5052
		(SELF TIMER/AF ILLUMINATOR)
		< IC >
IC101	(Not supplied)	ICX489CQZ-13 (Note)
		< TRANSISTOR >
Q101	6-550-119-01	TRANSISTOR DTC144EMT2L
Q102	6-550-119-01	TRANSISTOR DTC144EMT2L
Q103	8-729-050-22	TRANSISTOR 2SC4250 (T5LSONY1)
		< RESISTOR >
R101	1-218-935-11	RES-CHIP 33 5% 1/16W
R102	1-218-966-11	RES-CHIP 12K 5% 1/16W
R103	1-218-958-11	RES-CHIP 2.7K 5% 1/16W
R104	1-218-954-11	RES-CHIP 1.2K 5% 1/16W
R105	1-218-955-11	RES-CHIP 1.5K 5% 1/16W
R109	1-218-990-11	SHORT CHIP 0
		1-819-094-11 CONNECTOR, MEMORY STICK 10P
	(Not supplied)	FP-161 FLEXIBLE BOARD
		*****
		(Memory stick connector is including FP-161 flexible board.)
△	A-1086-398-A	FP-162 FLEXIBLE BOARD, COMPLETE
		*****
		(This flexible complete board is including CN101 (multi connector).)
△ BT901	1-780-141-21	BATTERY TERMINAL BOARD
		< CONNECTOR >
CN101	(Not supplied)	CONNECTOR, MULTIPLE (SOCKET)
		< DIODE >
D101	8-719-056-23	DIODE MA2S111-(K8).SO
		< JACK >
△ J101	1-817-331-11	DC JACK 5P (DC IN)

Ref. No.	Part No.	Description
		< LINE FILTER >
LF101	1-456-681-21	COIL, CHOKE
△	1-864-113-11	FP-163 FLEXIBLE BOARD
		*****
		(FLASH UNIT and C601 are not included in this flexible board.)
△	1-478-674-11	FLASH UNIT
		< CAPACITOR >
△ C601	1-100-969-11	CAP, ELECT 117uF 315V

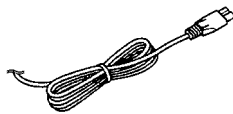
Electrical parts list of the CH-146 and SY-123 boards are not shown.  
Pages 5-7 to 5-11 are not shown.

(Note) Be sure to read "Precautions for Replacement of CCD Imager" on page 4-8 when changing the CCD imager.

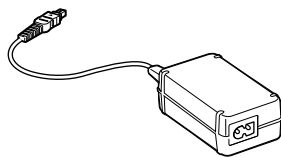
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

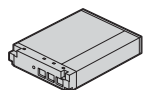
## Checking supplied accessories.



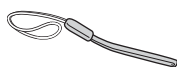
Power cord (1)  
 ▲ 1-769-608-31 (AEP, E)  
 ▲ 1-782-476-13 (CH)  
 ▲ 1-783-374-12 (UK, HK)  
 ▲ 1-790-107-22 (US, CND)  
 ▲ 1-790-732-12 (JE)  
 ▲ 1-823-947-12 (KR)  
 ▲ 1-827-945-12 (AUS)



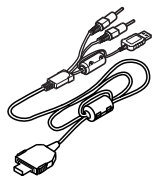
AC adaptor  
 AC-LS5/LS5B (1)  
 ▲ 1-477-730-51



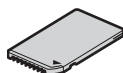
NP-FR1 battery pack (1)  
 (not supplied)



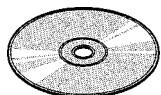
Wrist strap (1)  
 2-050-981-01



USB, AV cable for  
 multi-use terminal (1)  
 1-829-866-11



"Memory Stick" (32MB) (1)  
 (not supplied)



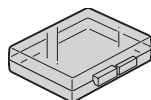
CD-ROM  
 (Cyber-shot application software) (1)  
 2-583-852-01 (US)  
 2-583-853-01  
 (CND, AEP, UK, E, HK, KR, AUS, JE)  
 2-583-854-01 (CH)



Conversion adaptor (1)  
 ▲ 1-569-008-21 (E)



Conversion adaptor (1)  
 ▲ 1-569-007-11 (E, JE)



Battery case (1)  
 (not supplied)

## Other accessories

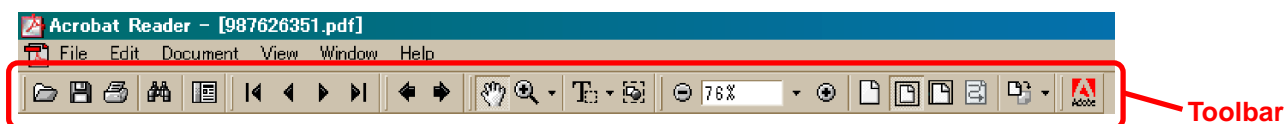
2-582-853-11 INSTRUCTION (READ THIS FIRST) (ENGLISH)  
 (EXCEPT AEP, KR, CH)  
 2-582-853-21 INSTRUCTION (READ THIS FIRST)  
 (FRENCH, ITALIAN) (CND, AEP)  
 2-582-853-31 INSTRUCTION (READ THIS FIRST)  
 (SPANISH, PORTUGUESE) (AEP, E, JE)  
 2-582-853-41 INSTRUCTION (READ THIS FIRST)  
 (GERMAN, DUTCH) (AEP)  
 2-582-853-51 INSTRUCTION (READ THIS FIRST)  
 (TRADITIONAL CHINESE, SIMPLIFIED CHINESE)  
 (E, HK, CH, JE)  
 2-582-853-61 INSTRUCTION (READ THIS FIRST)  
 (RUSSIAN, SWEDISH) (AEP)  
 2-582-853-71 INSTRUCTION (READ THIS FIRST)  
 (ARABIC, PERSIAN) (E)  
 2-582-853-81 INSTRUCTION (READ THIS FIRST) (KOREAN)  
 (KR, JE)  
 2-582-853-91 INSTRUCTION (READ THIS FIRST) (POLISH, CZECH)  
 (AEP)  
 2-582-854-11 INSTRUCTION (READ THIS FIRST)  
 (HUNGARIAN, SLOVAKIAN) (AEP)  
 2-582-856-11 INSTRUCTION (USER'S GUIDE) (ENGLISH)  
 (EXCEPT AEP, AR, KR, BR, CH)  
 2-582-856-21 INSTRUCTION (USER'S GUIDE) (FRENCH, ITALIAN)  
 (CND, AEP)  
 2-582-856-31 INSTRUCTION (USER'S GUIDE)  
 (SPANISH, PORTUGUESE) (AEP, E, JE)  
 2-582-856-41 INSTRUCTION (USER'S GUIDE) (GERMAN, DUTCH)  
 (AEP)  
 2-582-856-51 INSTRUCTION (USER'S GUIDE)  
 (TRADITIONAL CHINESE, SIMPLIFIED CHINESE)  
 (E, HK, CH, JE)  
 2-582-856-61 INSTRUCTION (USER'S GUIDE)  
 (RUSSIAN, SWEDISH) (AEP)  
 2-582-856-71 INSTRUCTION (USER'S GUIDE) (ARABIC, PERSIAN)  
 (E)  
 2-582-856-81 INSTRUCTION (USER'S GUIDE) (KOREAN) (KR, JE)  
 2-582-856-91 INSTRUCTION (USER'S GUIDE) (POLISH, CZECH)  
 (AEP)  
 2-582-857-11 INSTRUCTION (USER'S GUIDE)  
 (HUNGARIAN, SLOVAKIAN) (AEP)

The components identified by  
 mark ▲ or dotted line with  
 mark ▲ are critical for safety.  
 Replace only with part num-  
 ber specified.


Les composants identifiés par une  
 marque ▲ sont critiques pour la  
 sécurité.  
 Ne les remplacer que par une pièce  
 portant le numéro spécifié.




## [Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]





### Printing a text

1. Click the Print button .
2. Specify a printer, print range, number of copies, and other options, and then click [OK].

#### Application of printing:

To set a range to be printed within a page, select the graphic selection tool  and drag on the page to enclose a range to be printed, and then click the Print button.


### Reversing the screens displayed once

- To reverse the previous screens (operation) one by one, click the .
- To advance the reversed screens (operation) one by one, click the .

#### Application to the Service Manual:

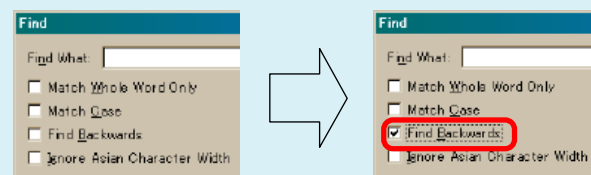
This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

### Finding a text

1. Click the Find button .
2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

#### Application to the Service Manual:

To execute "find" from current page toward the previous pages, select the check box "Find Backwards" and then click the "Find".








3. Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

#### Application to the Service Manual:


The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.


**Note:** The find function may not be applied to the Service Manual depending on the date of issue.

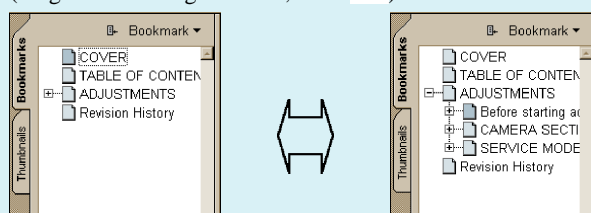
### Moving with link

1. Select either palm tool , zoom tool , text selection tool , or graphic selection tool .
2. Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form .
3. Then, click the link. (You will go to the link destination.)

### Moving with bookmark:



Click an item (text) on the bookmark pallet. and you can move to the link destination. Also, clicking  can display the hidden items.

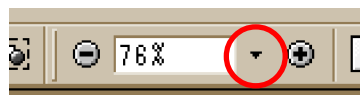
(To go back to original state, click )




### Zooming or rotating the screen display

#### "Zoom in/out"

- Click the triangle button in the zoom control box to select the display magnification. Or, you may click  or  for zooming in or out.







#### "Rotate"

- Click rotate tool , and the page then rotates 90 degrees each.

#### Application to the Service Manual:

The printed circuit board diagram you see now can be changed to the same direction as the set.

### Switching a page

- To move to the first page, click the .
- To move to the last page, click the .
- To move to the previous page, click the .
- To move to the next page, click the .

## Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2005.01	Official Release	—	—

# DSC-P200

Ver 1.1 2005.11

Revision History

## SECTION 6 ADJUSTMENTS

Auto-ADJ

### Link

• Before starting adjustments

• Adjusting items when replacing main parts and boards

• SERVICE MODE

• SERVICE MODE

• CAMERA SECTION ADJUSTMENTS

• PREPARATIONS BEFORE ADJUSTMENTS

• ADJUSTMENT PROGRAMS

• VIDEO SYSTEM ADJUSTMENTS

• CAMERA SYSTEM ADJUSTMENTS

• LCD SYSTEM ADJUSTMENTS

• ERROR

• INITIALIZATION OF DATA

- Use this Service Manual together with the Automatic Adjustment Program (DSC-P200 Auto-Adj Ver1.□□□.exe) and the Color Adjustment Program (P200ColorAdjustment.exe).

**Note:** □ (numeric value) of the file name varies depending on the version of Automatic Adjustment Program.

### Contents of LEVEL 2 and LEVEL 3 Service Manual

CONTENTS	LEVEL 2	LEVEL 3
1. SERVICE NOTE	○	×
2. DISASSEMBLY	○	×
3. BLOCK DIAGRAMS	OVERALL POWER	×
4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS	CD-517 FLEXIBLE, FP-162 FLEXIBLE, FP-163 FLEXIBLE, MEMORY STICK CONNECTOR (FP-161 FLEXIBLE), CONTROL SWITCH BLOCK (RL), (SW51740)	CH-146, SY-123 BOARD
5. REPAIR PARTS LIST	EXPLODED VIEWS	×
	ELECTRICAL PARTS	○ (CH-146, SY-123 BOARD)

SONY®

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## SECTION 6 ADJUSTMENTS

### Before starting adjustment

#### Precaution on Replacing the SY-123 board

- The Repair Board has already been adjusted. Re-initialization or EVR data copy from the set before repair is not required.
- Perform the adjustment items necessary after SY Board replacement.

## 1-1. Adjusting items when replacing main parts and boards

When replacing main parts and boards, adjust the items indicated by ● in the following table.

**Note 1:** The automatic Adjustment Program does not support the “Initialization of data”. Perform it manually.

**Note 2:** Use the Color Adjustment Program (P200Adjustment.exe).

Adjusting item	Adjustment	Replaced parts											
		Block replacement				Mounted parts replacement						Board replacement	
		Lens block	Flash unit	LCD block	LCD block	CD-517 board	CD-517 board	CH-146 board	SY-123 board	SY-123 board	SY-123 board	CD-517 board	CH-146 board
				LCD901 LCD unit	Back light unit	IC101 (CCD imager)	D104 (AF illumination LED)	IC101 (Timing gen., CCD signal process)	IC301 (Camera DSP)	IC302 (Video amp.)	IC801 (LCD driver)	(COMPLETE)	(COMPLETE)
(Note 1)	Initialization of data												
VIDEO adjustment	Video output level adj.								●	●			●
CAMERA adjustment 1	Flange back adj.	●				●						●	●
CAMERA adjustment 2	Flange back check	●				●						●	●
(Note 2)	Color shading adj.	●				●		●				●	●
CAMERA adjustment 3	F No. compensation												
	Mechanical shutter adj.	●				●		●				●	●
	Measure gain adj.												
	Light value adj.												
(Note 2)	AWB 3200K-5800K standard data input	●				●		●				●	●
CAMERA adjustment 4	Color reproduction adj. & check												
	CCD linearity check	●				●		●				●	●
	CCD white defect compensation check												
	CCD black defect compensation check												
CAMERA adjustment 5	Strobe adj.	●	●			●	●	●				●	●
	Auto focus illumination check												
LCD adjustment	VCO adj.												
	Contrast adj.			●	●				●		●		●
	V-COM adj.												
	White Balance adj.												

Table 6-1-1

6-1. CAMERA SECTION ADJUSTMENTS

1-1. PREPARATIONS BEFORE ADJUSTMENTS

1-1-1. List of Service Tools

- Oscilloscope
- Color monitor
- AC power adapter



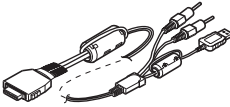
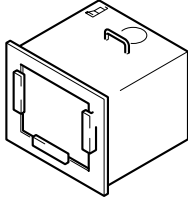
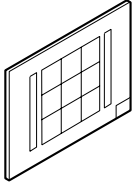
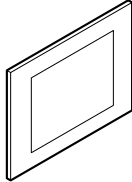
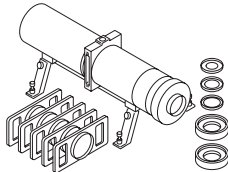
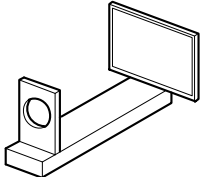
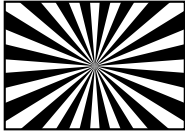
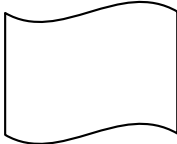
<div>J-1</div> <div></div> <div>Personal computer (Note 1)</div>	<div>J-2</div> <div></div> <div>HASP key and application for adjustment (SEUS)</div> <div>Contact our service headquarter of each area how to get the application for adjustment (SEUS) and HASP key.</div>	<div>J-3</div> <div></div> <div>USB, A/V cable for multi-use terminal 1-829-866-11</div>
<div>J-4</div> <div></div> <div>Pattern box PTB-450 J-6082-200-A or Small pattern box PTB-1450 J-6082-557-A</div>	<div>J-5</div> <div></div> <div>9 colors chart (Note 2)</div> <div>For PTB-1450: J-6082-562-A</div>	<div>J-6</div> <div></div> <div>Clear chart</div> <div>For PTB-450: J-6080-621-A</div> <div>For PTB-1450: J-6082-560-A</div>
<div>J-7</div> <div></div> <div>Minipattern box J-6082-353-B</div>	<div>J-8</div> <div></div> <div>Flange back adjustment jig J-6082-563-A</div>	<div>J-9</div> <div></div> <div>Siemens star chart J-6080-875-A</div>
<div>J-10</div> <div></div> <div>Back ground paper J-2501-130-A</div>		

Fig. 6-1-1

**Note1:** Personal computer

- OS: Windows98/98SE/Me/2000/XP Home/XP Pro
- RAM: 256MB or more recommended
- USB: 2.0 recommended (also compatible with 1.1)
- Two connectors are required.

**Note2:** In using the 9 colors chart on the pattern box PTB-450, adjust the chart size through the procedure shown below so that it matches to the pattern box PTB-450.

- 1) Prepare a woody board A of the thickness 5 mm, and paint it mat-black.
- 2) Fit the 9 colors chart in the woody board A, and secure the chart with a black tape, etc. to shield the light.

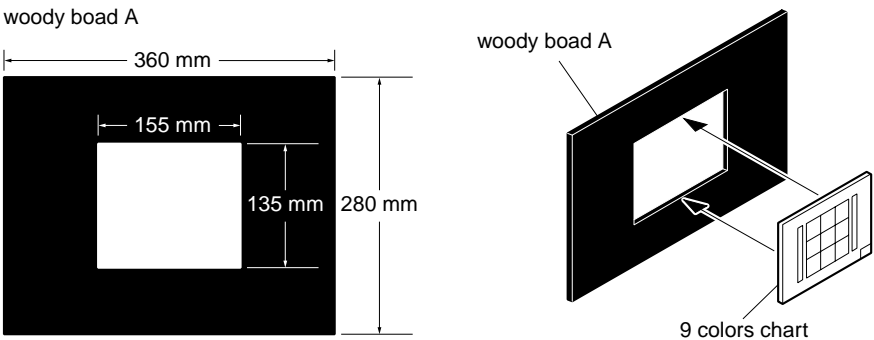
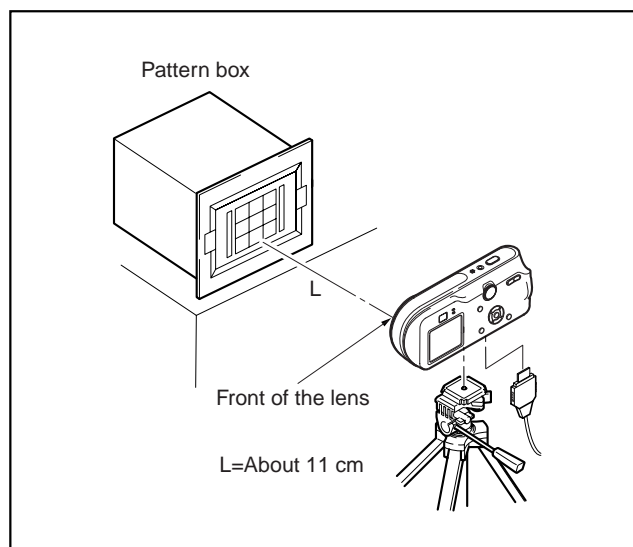


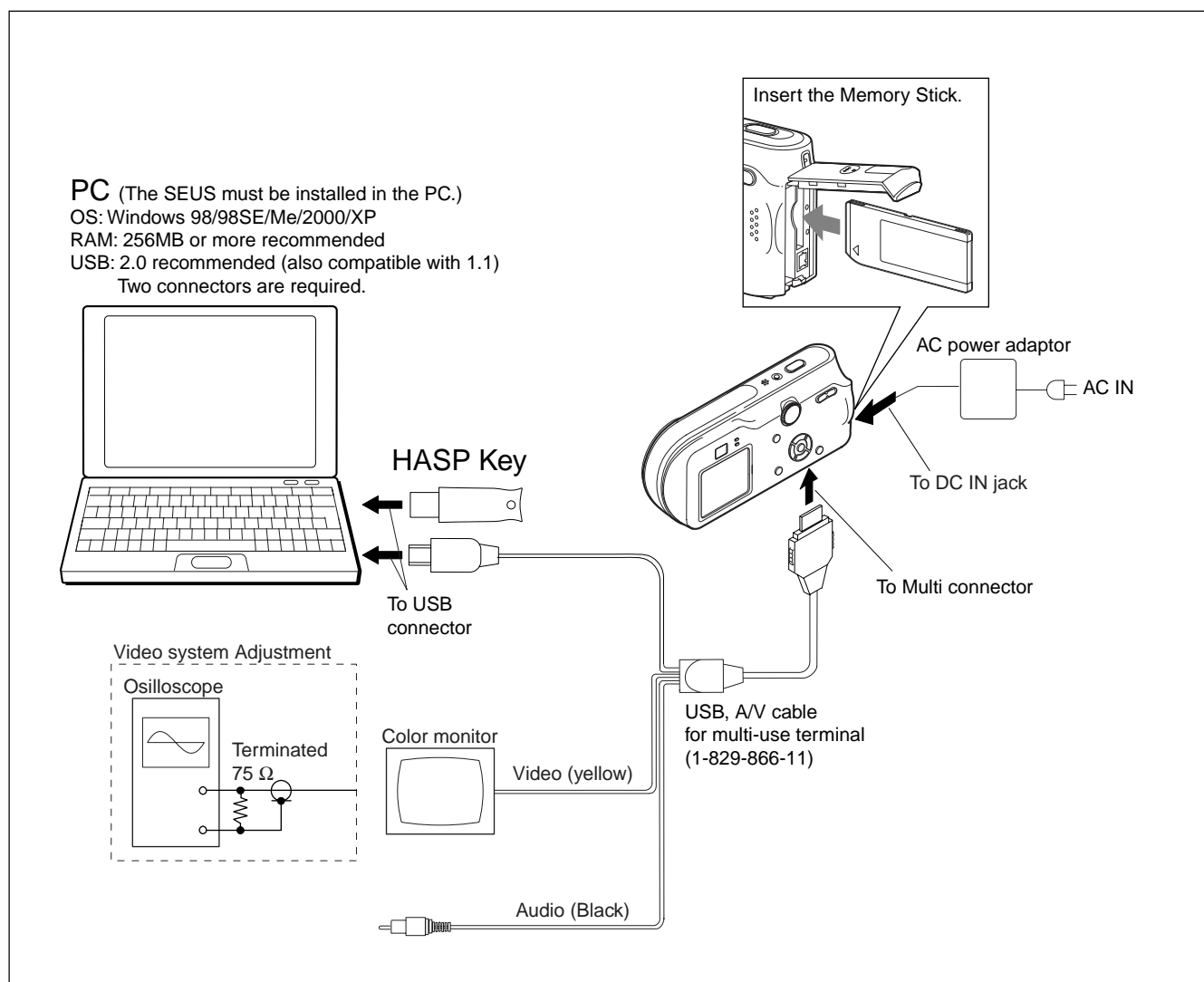
Fig. 6-1-2

### 1-1-2. Preparations

- 1) Connect the equipment for adjustments according to Fig. 6-1-4.
- 2) Start up the application for adjustment (SEUS).



**Fig. 6-1-3**



**Fig. 6-1-4**

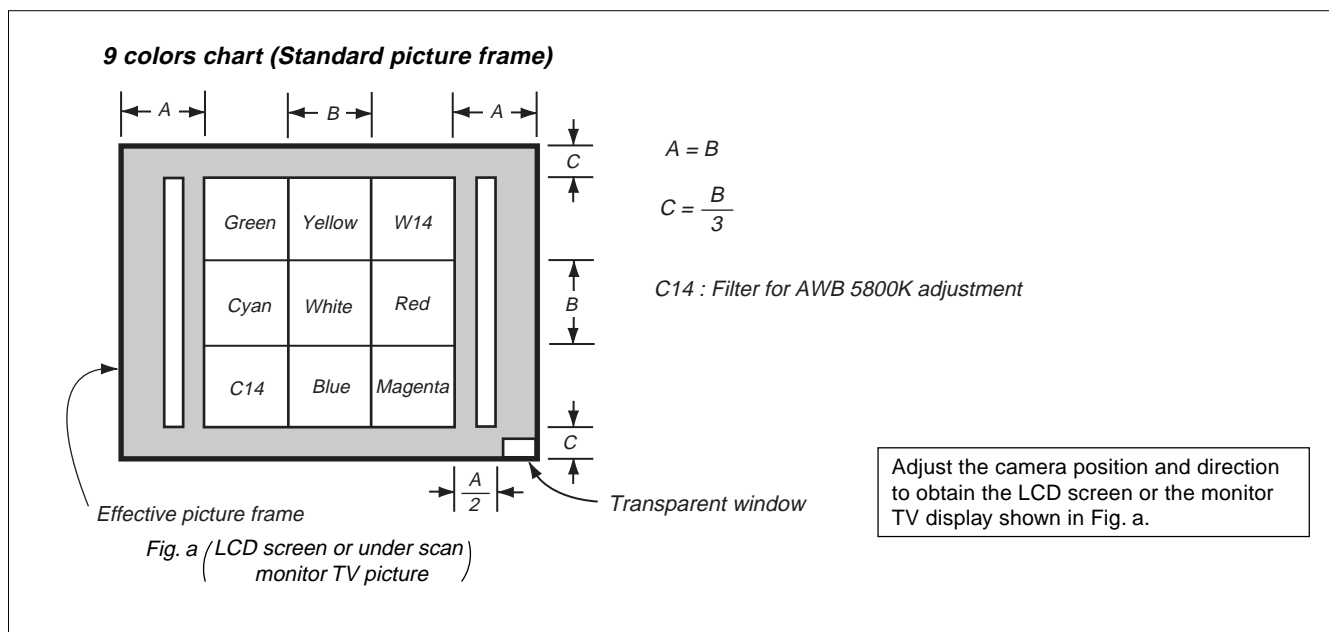


### 1-1-3. Precautions

#### 1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments.

1. Mode Dial ..... P (Program auto)
2. ZOOM button ..... WIDE end
3. Video Out (SET UP setting) ..... NTSC
4. Digital Zoom (SET UP setting) ..... Off
5. EV (Menu items) ..... 0EV
6. Focus (Menu items) ..... Multi AF
7. WB (Menu items) ..... Auto
8. ISO (Menu items) ..... Auto
9. Flash Level (Menu items) ..... Normal
10. P.Effect (Menu items) ..... Off
11. Saturation (Menu items) ..... Normal
12. Contrast (Menu items) ..... Normal
13. Sharpness (Menu items) ..... Normal



**Fig. 6-1-5**

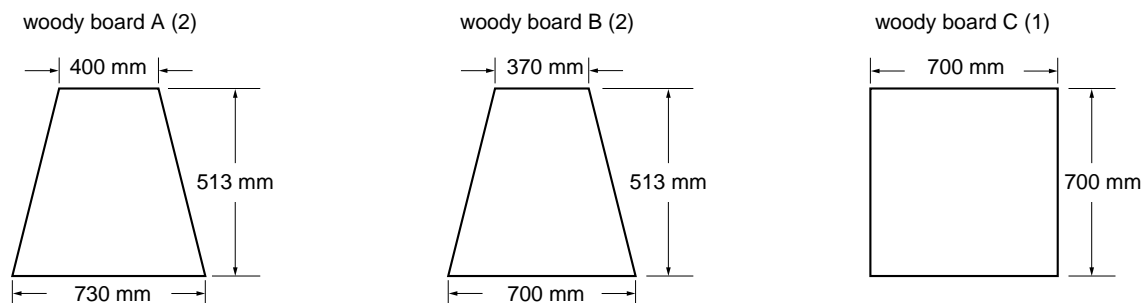
#### 2. Subjects

- 1) 9 colors chart (Standard picture frame).  
When performing adjustments using the 9 colors chart, adjust the picture frame as shown in Fig. 6-1-5. (Standard picture frame)
- 2) Clear chart (Standard picture frame)  
Remove the 9 colors chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time)

### 3. Preparing the Flash Adjustment Box

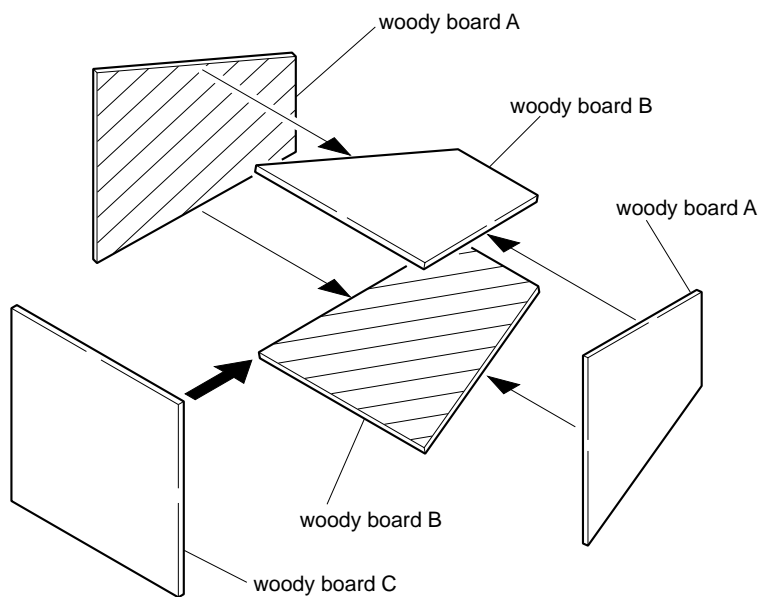
A dark room is required to provide an accurate flash adjustment.  
If it is not available, prepare the flash adjustment box as given below;

- 1) Provide woody board A, B and C of 15 mm thickness.



**Fig. 6-1-6**

- 2) Apply black mat paint to one side of woody board A and B.
- 3) Attach background paper (J-2501-130-A) to woody board C.
- 4) Assemble so that the black sides and the background paper side of woody board A, B and C are internal. (Fig. 6-1-7)



**Fig. 6-1-7**

#### 1-1-4. Using Method of SEUS

The application for adjustment (SEUS) is used to change the coefficient for calculating the signal processing or EVR data. The SEUS performs two-way communication between PC and set through the USB terminal. The two-way communication result data can be written to the nonvolatile memory.

##### 1. Connection

- 1) Connect the HASP key to the USB terminal of the PC.
- 2) Connect the PC and set with the USB cable.
- 3) Confirm that the set starts in the USB mode.
- 4) Start the SEUS on the PC.
- 5) Click **Connect** on the SEUS screen. If the connection is normal, the SEUS screen will be as shown in Fig. 6-1-8, indicating the "connected" state.

**Note:** The SEUS will go in "disconnect" state, if the set is turned off (for instance, by resetting the set). In such a case, click **Connect** on the SEUS screen to restore the "connected" state.

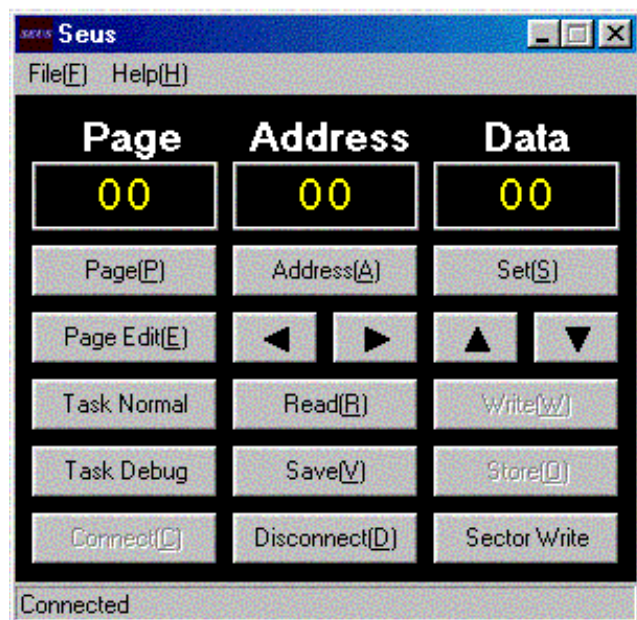


Fig. 6-1-8

##### 2. Operation

- **Page change**  
To change the page, click **Page** on the SEUS screen and enter the page to be changed. The page is displayed in hexadecimal notation.
- **Address change**  
To change the address, click **Address** on the SEUS screen and enter the address to be changed. The address is displayed in hexadecimal notation.
- **Data change**  
To change the data, click **Set** on the SEUS screen and enter the data. The data is displayed in hexadecimal notation. This operation does not write the data to the nonvolatile memory.
- **Data saving**  
To write the all changed data to the nonvolatile memory, click **Save** on the SEUS screen and wait for more than 3 sec.
- **Data reading**  
The data displayed on the SEUS screen are the data values at the time when the pages and addresses were set, and they are not updated automatically. To check the data change, click **Read** on the SEUS screen and update the displayed data.

#### 1-1-5. Precaution on Use of SEUS

Wrong SEUS operation could clear correct adjustment data. To prevent the data clear by mistake, it is recommended to save all adjustment data by clicking **Page Edit** on the SEUS screen before starting the adjustment.

##### Saving Method:

- 1) Click **Page Edit** on the SEUS screen to display the SEUS PAGE EDIT screen.
- 2) Click **Page**, and enter the page number to be saved.
- 3) Click **Page** to read the data to be saved from the camera.
- 4) Click **File** and save the data to PC.

##### Loading Method:

- 1) Select page: 00, address: 01 and set data: 01.
- 2) Click **Page Edit** on the SEUS screen to display the SEUS PAGE EDIT screen.
- 3) Click **File** and load the data from PC.
- 4) Click **Write** on the SEUS PAGE EDIT screen.
- 5) Click **Close** to close the SEUS PAGE EDIT screen.
- 6) Click **Save** on the SEUS screen.
- 7) Wait for more than 3 sec.
- 8) Select page: 80, address: 30, and check that the data is "00".
- 9) Select page: 00, address: 01 and set data: 00.

## 1-2. ADJUSTMENT PROGRAMS

The DSC-P200 is adjusted with the Automatic Adjustment Program and the Color Adjustment Program.

The Automatic Adjustment Program automatically controls the adjustment operations that were formerly entered manually on the operation screen of the SEUS (some adjustments may be manually operated on the SEUS operation screen).

The Color Shading Adjustment Program automatically performs “Color Shading Adjustment” and “AWB 3200K-5800K Standard Data Input” of Camera System Adjustment.

### 1-2-1. Automatic Adjustment Program

#### 1. Precautions When Using Automatic Adjustment Program

- 1) The Automatic Adjustment Program writes the adjustment results such as EVR data to the set through two-way communication with the camera via the SEUS. Accordingly, the Automatic Adjustment Program must be used in the environment where the SEUS operates.
- 2) The program run time may vary depending on the environment of the personal computer used.
- 3) Even if the Automatic Adjustment Program is used without starting the SEUS, the SEUS will start automatically when the adjustment is executed. However, it may take time for the SEUS to start, and therefore the Automatic Adjustment Program should be used with the SEUS started in order to reduce the program run time.

#### 2. Start of Automatic Adjustment Program

Double-click the application file (DSC-P200 Auto-Adj Ver\_1.□r□.exe), and the Automatic Adjustment Program will start.

**Note:** □ (numeric value) of the file name varies depending on the version of Automatic Adjustment Program.

### 3. Function of Each Button on Main Menu Screen

When the Automatic Adjustment Program started, the Main Menu screen in Fig. 6-1-9 will appear. On this screen, select each adjustment section.

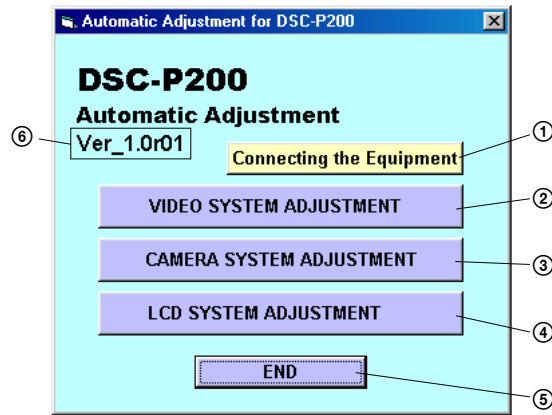


Fig. 6-1-9

- ① **Connecting the Equipment** button  
A connection diagram of the equipment is displayed.
- ② **VIDEO SYSTEM ADJUSTMENT** button  
The “VIDEO SYSTEM ADJUSTMENT” screen appears.
- ③ **CAMERA SYSTEM ADJUSTMENT** button  
The “CAMERA SYSTEM ADJUSTMENT” screen appears.
- ④ **LCD SYSTEM ADJUSTMENT** button  
The “LCD SYSTEM ADJUSTMENT” screen appears.
- ⑤ **END** button  
The Automatic Adjustment Program finishes.
- ⑥ This part indicates the version of Automatic Adjustment Program.

## 1-2-2. Color Adjustment Program

### 1. Application Environment

OS: Windows 98/98SE/Me/2000/XP

RAM: 256MB or more recommended

USB: 2.0 recommended (also compatible with 1.1)

Two connectors are required.

### 2. Installation Method

Extract the file compressed in the ZIP format (P200Color Adjustment.zip). Execute the extracted file (setup.exe), and the installer will start. Install the program following the instructions given on the installer screen.

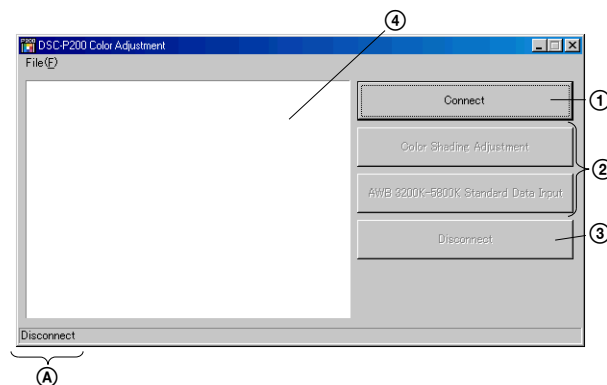
### 3. Notes When Using the Color Adjustment Program

- 1) The SEUS must be installed in the PC.
- 2) The HASP Key for SEUS must be connected to the USB connector. The program will not start unless the HASP Key is connected.

### 4. Starting Method of Color Adjustment Program

Click the **[Start]** button on the task bar, and click the **[DSC-P200 Color Adjustment]** from the **[Programs]**, and the program will start.

## 5. Screen and Function of Each Button of Color Adjustment Program



**Fig. 6-1-10**

- ① **[Connect]** button  
Makes connection to the camera and switches the camera to the adjustment mode. In the case of successful connection to the camera, the indication at the part (A) changes to “Connected” and the following buttons become active.
  - **[Color Shading Adjustment]** button
  - **[AWB 3200K-5800K Standard Data Input]** button
  - **[Disconnect]** button
- ② Adjustment start buttons  
Start the adjustment or checking of respective button names.
- ③ **[Disconnect]** button  
Cancels the connection to the camera.
- ④ Captured picture display screen  
Displays a picture captured by the camera when the adjustment or checking was performed.

1-3. VIDEO SYSTEM ADJUSTMENTS

1-3-1. Function of Each Button on Video System Adjustment Screen

Click the VIDEO SYSTEM ADJUSTMENT button on the Main Menu screen, and the “VIDEO SYSTEM ADJUSTMENT” screen in Fig. 6-1-11 will appear.

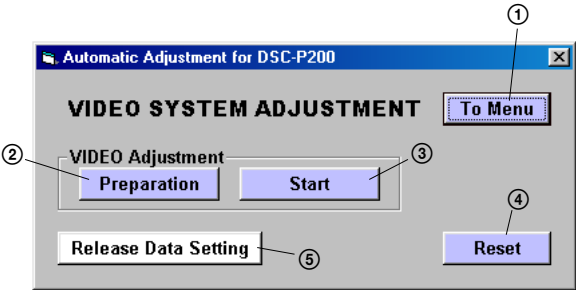


Fig. 6-1-11

- ① **To Menu** button  
The Main Menu screen comes back.
- ② **Preparation** button  
Notes for adjustment or jigs used are displayed.
- ③ **Start** button  
“Video Adjustment” starts.
- ④ **Reset** button  
This button functions same as the Reset button of the camera.
- ⑤ **Release Data Setting** button  
The data setting at the adjustment is cancelled.  
During the data setting, the button color changes from “white” to “red”. When the data setting is cancelled, the button color returns to “white”.  
(Use this button when an error occurred in the video adjustment. If the adjustment completed successfully, the data setting is automatically cancelled and the button color returns to “white”.)

1-3-2. Adjustment Items of VIDEO System Adjustment

The adjustment items of video system adjustment are as listed in Table 6-1-2. The Automatic Adjustment Program executes the adjustment items if the VIDEO Adjustment Start button is clicked.

Button Name	Adjustment	Signal	Page	Address
VIDEO Adjustment	VIDEO Output Level Adj.	Arbitrary	8F	D0

Table 6-1-2

### 1-3-3. Adjusting Method

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during Video Adj.
2. Video Output Level Adj.
3. Release of Data Setting during Video Adj.

[Specified value of video output level adj.]

Measurement Point	Video terminal of USB, A/V cable for multi-use terminal (75 $\Omega$ terminated)
Measuring Instrument	Oscilloscope
Specified Value	Sync level: A = $286 \pm 5$ mV (NTSC mode) A = $300 \pm 5$ mV (PAL mode) Burst level: B = $286 \pm 30$ mV (NTSC mode) B = $300 \pm 30$ mV (PAL mode)

[Adjusting method]

- 1) Click the **[Start]** button of the VIDEO Adjustment.
- 2) The Automatic Adjustment Program executes the “1. Data Setting during Video Adj.”.
- 3) If “1. Data Setting during Video Adj.” completed successfully, the next message is displayed during the execution of “2. Video Output Level Adj.”. Using the UP/DOWN key on the SEUS Operation screen, adjust so that the sync level of the video signals satisfies the specified value. After the adjustment, check that the burst level of the video signals satisfies the specified value, and click the **[OK]** button in the message.

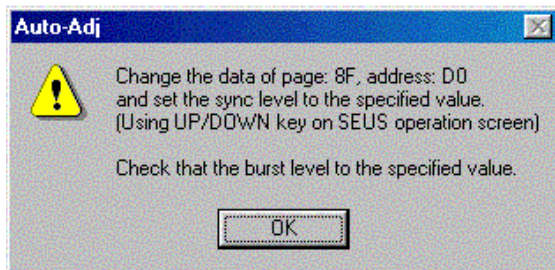


Fig. 6-1-12

- 4) If the **[OK]** button is clicked, “3. Release of Data Setting during Video Adj.” will be executed.
- 5) Upon successful completion of all items of the VIDEO Adjustment, the following message is displayed. Click the **[OK]** button.



Fig. 6-1-13

### SEUS operation screen



Fig. 6-1-14

### Check on the oscilloscope

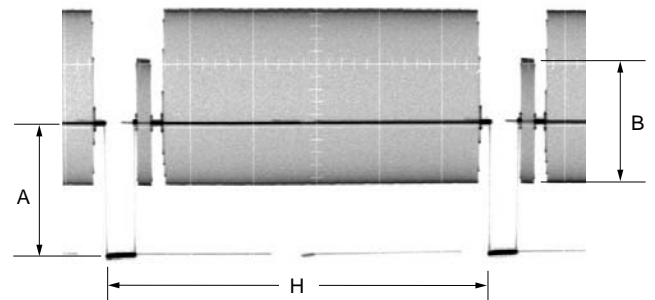
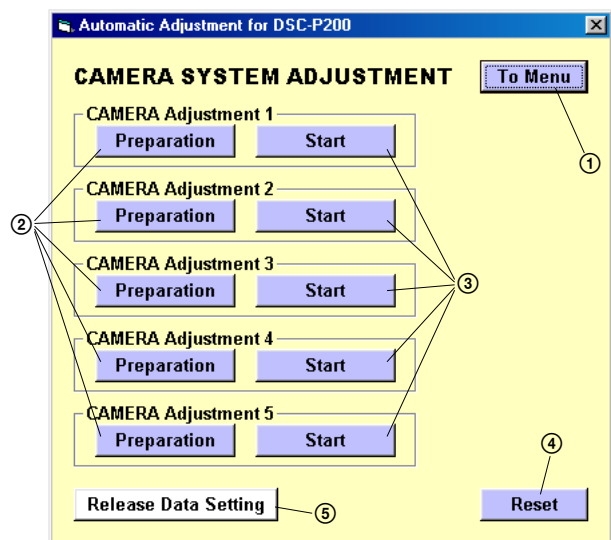


Fig. 6-1-15

## 1-4. CAMERA SYSTEM ADJUSTMENTS

### 1-4-1. Function of Each Button on Camera System Adjustment Screen

Click the **CAMERA SYSTEM ADJUSTMENT** button on the Main Menu screen, and the “CAMERA SYSTEM ADJUSTMENT” screen in Fig. 6-1-16 will appear.



**Fig. 6-1-16**

- ① **To Menu** button  
The Main Menu screen comes back.
- ② **Preparation** button  
Notes for adjustment or jigs used are displayed.
- ③ **Start** button  
Each adjustment from “Camera Adjustment 1” to “Camera Adjustment 5” starts.
- ④ **Reset** button  
This button functions same as the Reset button of the camera.
- ⑤ **Release Data Setting** button  
The data setting at the adjustment is cancelled.  
During the data setting, the button color changes from “white” to “red”. When the data setting is cancelled, the button color returns to “white”.  
(Use this button when an error occurred in the camera adjustment 1-5. If the adjustment completed successfully, the data setting is automatically cancelled and the button color returns to “white”.)



#### 1-4-2. Adjustment Items of Camera System Adjustment

The adjustment items of camera system adjustment are as listed in Table 6-1-3. The Automatic Adjustment Program divides the adjustment items into four, camera adjustment 1-5. Clicking either CAMERA Adjustment Start button allows the adjustment item which corresponds to that button to be executed.

The adjustment conditions of the subject and filter vary depending on which item is adjusted. The Adjustment Program displays an instruction for the subject and filter as a message during the adjustment.

Button Name	Adjustment	Subject	Adjustment Page	Adjustment Address
CAMERA Adjustment 1	Flange Back Adj.	Siemens star chart with ND filter for minipattern box (Note 1) or Flange back adjustment jig	6D	B0 to B7, C0 to C7
			6F	18 to 53
CAMERA Adjustment 2	Flange Back Check	Siemens star (1.0m from front the lens) (Luminance: 200 to 400 lux)		
(Note 2)	Color Shading Adj.	Clear chart (Standard picture frame)		
CAMERA Adjustment 3	F No. Compensation	Clear chart (Standard picture frame)	6F	60 to 64, 6B to 6D
	Mechanical Shutter Adj.		6F	6B to 6D, B8 to D7
	Measure Gain Adj.		6F	6B, 6F
	Light Value Adj.		78	0C to 0F
(Note 2)	AWB 3200K-5800K Standard Data Input	9 colors chart (Standard picture frame)	6E	65 to 67
CAMERA Adjustment 4	Color Reproduction Adj. & Check	9 colors chart (Standard picture frame)	6E	00 to 21, 24 to 49
	CCD Linearity Check	Clear chart (Standard picture frame)		60 to 67
	CCD White Defect Compensation Check			
	CCD Black Defect Compensation Check			
CAMERA Adjustment 5	Strobe Adj.	Flash adjustment box (50 cm)	6E	72 to 75
	Auto focus illumination Check		6F	D8 to EF
			6F	10 to 17

**Note 1:** Dark Siemens star chart.

**Note 2:** Use the Color Adjustment Program (P200ColorAdjustment.exe).

**Table 6-1-3**

### 1-4-3. Adjusting Method

#### 1. CAMERA Adjustment 1

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Flange Back Adj.
3. Release of Data Setting during Camera Adj.

#### [Adjusting method]

- 1) Click the **[Start]** button of the CAMERA Adjustment 1.
- 2) The Automatic Adjustment Program executes “1. Data Setting during Camera Adj.”.
- 3) Upon successful completion of the “1. Data Setting during Camera Adj.”, the following message is displayed. Set the subject by referring to “Preparation of Flange Back Adj.”.

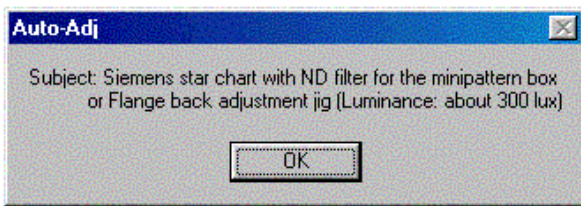


Fig. 6-1-17

- 4) If the **[OK]** button is clicked, “2. Flange Back Adj.” and “3. Release of Data Setting during Camera Adj.” will be executed.
- 5) Upon successful completion of all items of the CAMERA Adjustment 1, the following message is displayed. Click the **[OK]** button.

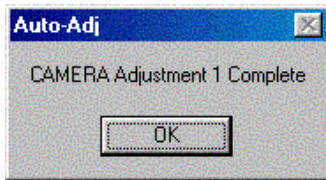


Fig. 6-1-18

#### Preparation of Flange Back Adj.

(Using the minipattern box)

- 1) The minipattern box is installed as shown in the following figure.

**Note 1:** The attachment lenses are not used.

**Note 2:** Take care not to hit the mini-pattern box when extending the lens.

- 2) Install the minipattern box so that the distance between it and the front of lens of camera is less than 3 cm.
- 3) Make the height of minipattern box and the camera equal.
- 4) Check the output voltage of the regulated power supply is the specified voltage  $\pm 0.01$  Vdc.
- 5) Check that the center of Siemens star chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.

Specified voltage: The specified voltage varies according to the minipattern box, so adjustment the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

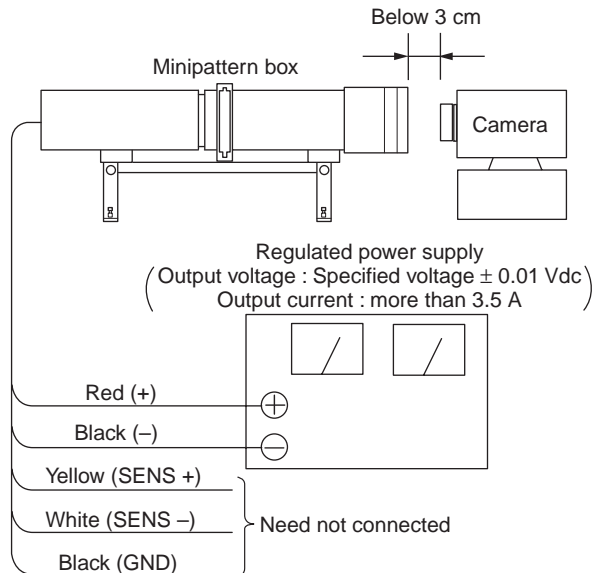


Fig. 6-1-19

#### Preparation of Flange Back Adj.

(Using the flange back adjustment jig)

(Luminance: about 300 lux)

- 1) Install the flange back adjustment jig so that the distance between it and the front of lens of camera is less than 3 cm.

**Note 3:** Take care not to hit the flange back adjustment jig when extending the lens.

- 2) Make the height of flange back adjustment jig and the camera equal.
- 3) Check that the center of chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.

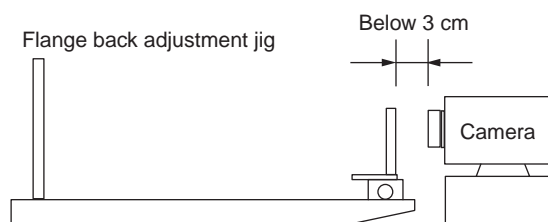


Fig. 6-1-20

## 2. CAMERA Adjustment 2

### [Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Flange Back Check
3. Release of Data Setting during Camera Adj.

### [Adjusting method]

- 1) Click the **[Start]** button of the CAMERA Adjustment 2.
- 2) The Automatic Adjustment Program executes “1. Data Setting during Camera Adj.”.
- 3) Upon successful completion of the “1. Data Setting during Camera Adj.”, the following message is displayed. Set the subject in accordance with the message.

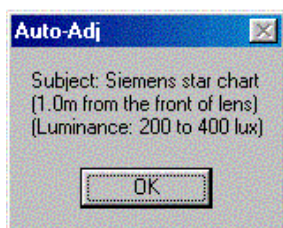


Fig. 6-1-21

- 4) Click the **[OK]** button is clicked, “2. Flange Back Check” is executed. The following messages are displayed, and then operate the camera to make a check in accordance with the messages.

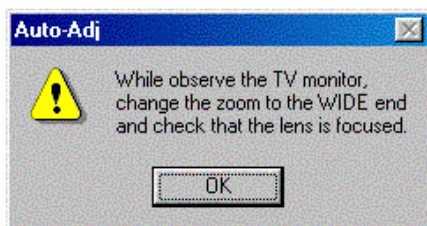


Fig. 6-1-22

- 5) Upon completion of “2. Flange Back Check”, “3. Release of Data Setting during Camera Adj.” is executed.
- 6) Upon successful completion of all items of the CAMERA Adjustment 2, the following message is displayed. Click the **[OK]** button.

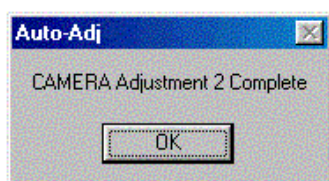


Fig. 6-1-23

## 3. Picture Frame Setting (Standard Picture Frame)

In the “Color Shading Adjustment”, “CAMERA Adjustment 3”, “AWB 3200K-5800K Standard Data Input” and “CAMERA Adjustment 4”, set the picture frame so as to attain the positions shown in the following figure when shooting the 9 colors chart.

### Check on the oscilloscope

Measurement Point: Video terminal of USB, A/V cable for multi-use terminal (75Ω terminated)

#### 1. Horizontal period

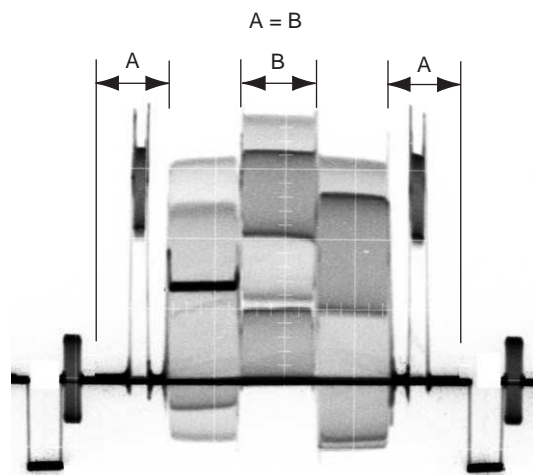


Fig. 6-1-24

#### 2. Vertical period

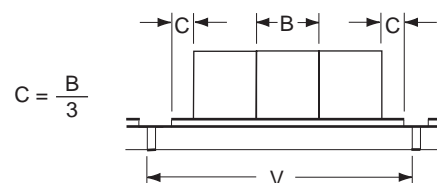


Fig. 6-1-25

### Check on the monitor TV

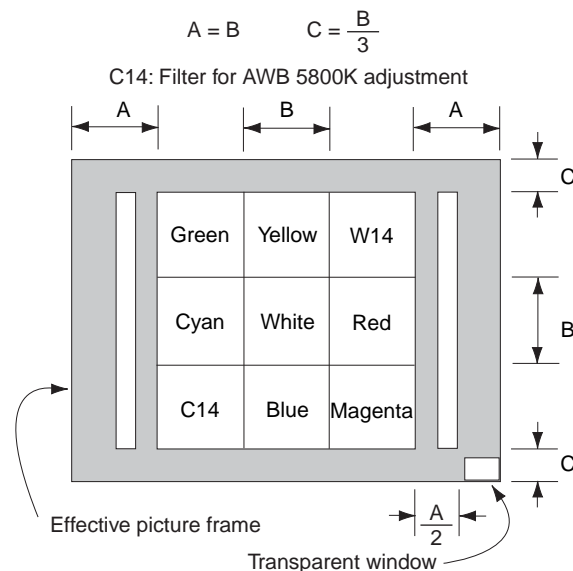
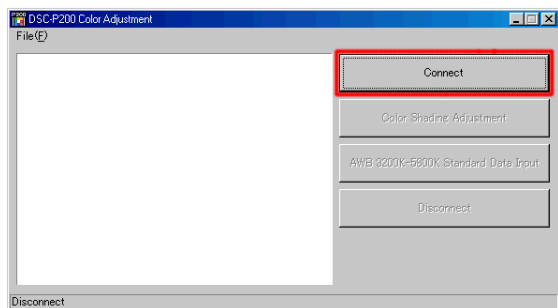


Fig. 6-1-26

#### 4. Color Shading Adjustment

##### [Adjustment method]

- 1) Start the Color Adjustment Program (P200ColorAdjustment.exe).
- 2) Click the **Connect** button to set the camera to the adjustment mode.

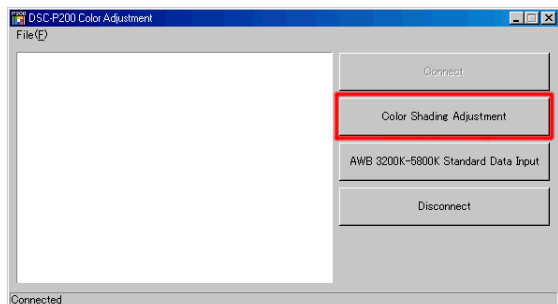


**Fig. 6-1-27**

- 3) Adjust the mode dial of the camera to “P” and set MACRO mode. Shoot the 9 colors chart with the zoom at WIDE end.
- 4) Adjust the camera direction and distance to set the picture frame. (Refer to 3. Picture Frame Setting)
- 5) Remove the 9 colors chart in the pattern box, and set the clear chart.

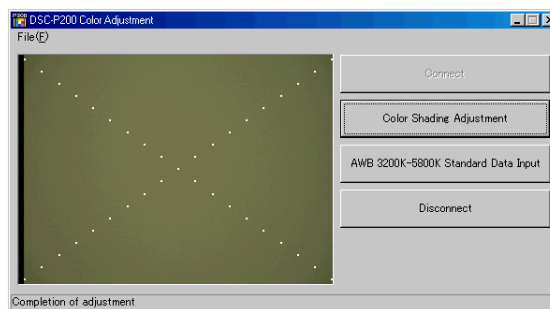
**Note 1:** At this time, nothing must be reflected in the clear chart.

- 6) Click the **Color Shading Adjustment** button.



**Fig. 6-1-28**

- 7) A picture captured by the camera is displayed on the screen, and the adjustment and checking are performed.



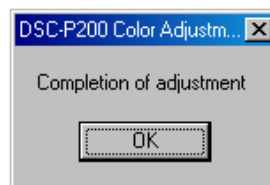
**Fig. 6-1-29**

**Note 2:** If the following message is displayed, the picture frame setting is faulty. Check the picture frame, and then perform readjustment.



**Fig. 6-1-30**

- 8) Upon successful completion of the adjustment, the following message is displayed. Click the **OK** button.



**Fig. 6-1-31**

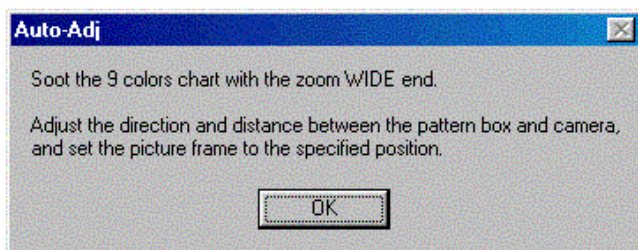
## 5. CAMERA Adjustment 3

### [Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Picture Frame Setting
3. F No. Compensation
4. Mechanical Shutter Adj.
5. Measure Gain Adj.
6. Light Value Adj.
7. Release of Data Setting during Camera Adj.

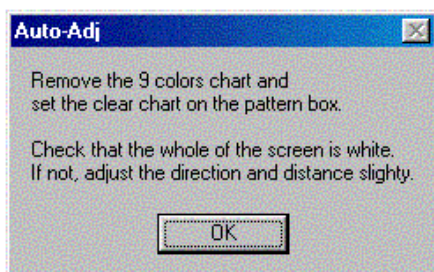
### [Adjusting method]

- 1) Click the  button of the CAMERA Adjustment 3.
- 2) The Automatic Adjustment Program executes the "1. Data Setting during Camera Adj."
- 3) Upon successful completion of "1. Data Setting during Camera Adj.", "2. Picture Frame Setting" is executed. The following message is displayed, and then referring to Fig. 6-1-24 to Fig. 6-1-26 (See page 6-15), set the subject and click the  button.



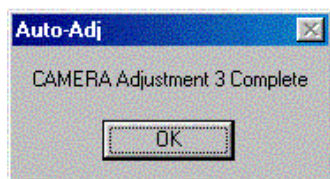
**Fig. 6-1-32**

After that, the next message is displayed. Then, change the chart in accordance with the message.



**Fig. 6-1-33**

- 4) Click the  button, and the items from "3. F No. Compensation" to "7. Release of Data Setting during Camera Adj." will be executed.
- 5) Upon successful completion of all items of the CAMERA Adjustment 3, the following message is displayed. Click the  button.

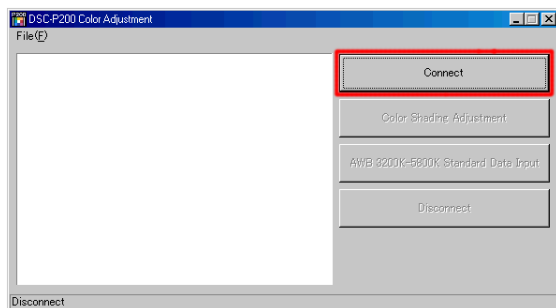


**Fig. 6-1-34**

## 6. AWB 3200K-5800K Standard Data Input

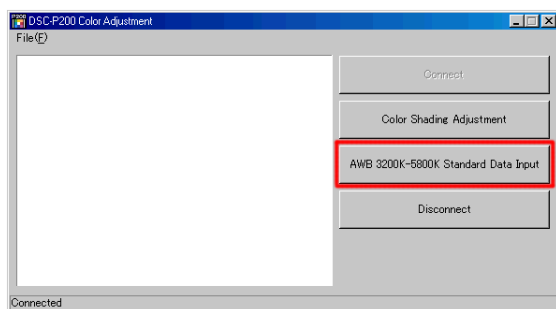
### [Adjustment method]

- 1) Start the Color Adjustment Program (P200ColorAdjustment.exe).
- 2) Click the **Connect** button to set the camera to the adjustment mode.



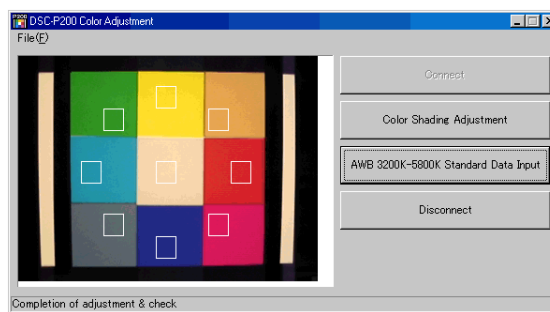
**Fig. 6-1-35**

- 3) Adjust the mode dial of the camera to “P” and set MACRO mode. Shoot the 9 colors chart with the zoom at WIDE end.
- 4) Adjust the camera direction and distance to set the picture frame. (Refer to 3. Picture Frame Setting)
- 5) Click the **AWB 3200K-5800K Standard Data Input** button.



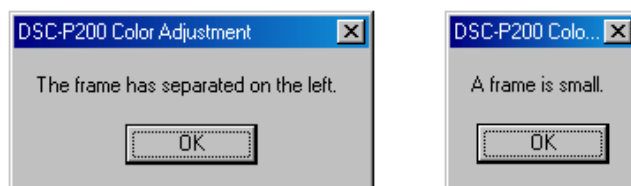
**Fig. 6-1-36**

- 6) A picture captured by the camera is displayed on the screen, and the adjustment and checking are performed.



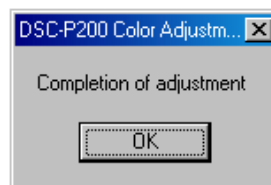
**Fig. 6-1-37**

**Note:** If the following message is displayed, the picture frame setting is faulty. Check the picture frame, and then perform readjustment.



**Fig. 6-1-38**

- 7) Upon successful completion of the adjustment, the following message is displayed. Click the **OK** button.



**Fig. 6-1-39**

- 8) Perform the “Camera Adjustment 4” successively without turning off the power switch of the camera.



## 7. CAMERA Adjustment 4

**Note:** After executing the “AWB 3200-5800K Standard Data Input” perform the “CAMERA Adjustment 4” successively without turning off the power switch of the camera.

### [Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Picture Frame Setting
3. Color Reproduction Adj. & Check
4. CCD Linearity Check
5. CCD White Defect Compensation Check
6. CCD Black Defect Compensation Check
7. Release of Data Setting during Camera Adj.

### [Adjusting method]

- 1) Click the **[Start]** button of the CAMERA Adjustment 4.
- 2) The Automatic Adjustment Program executes the “1. Data Setting during Camera Adj.”.
- 3) Upon successful completion of “1. Data Setting during Camera Adj.”, “2. Picture Frame Setting” is executed. The following message is displayed, and then referring to Fig. 6-1-24 to Fig. 6-1-26 (See page 6-15), set the subject and click the **[OK]** button.

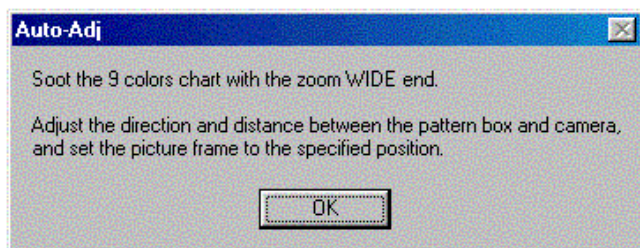


Fig. 6-1-40

- 4) After that, “3. Color Reproduction Adj. & Check” will be executed. Upon completion of adjustment, the check result is displayed on the Color Reproduction Check screen.

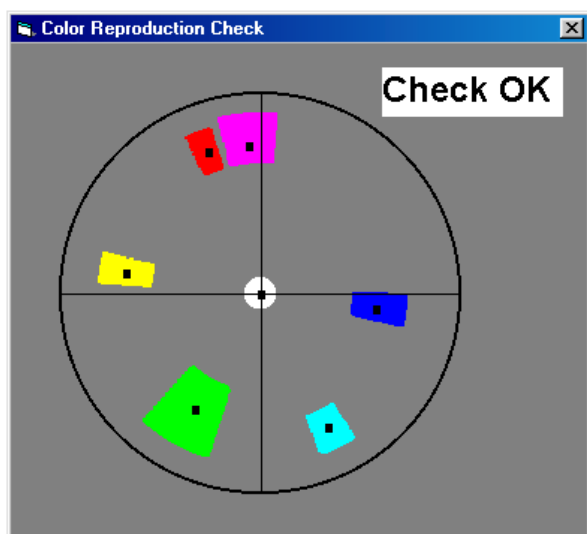


Fig. 6-1-41

At this time, the following message is displayed, and click the **[Yes]** button if the check result display at the upper right of Color Reproduction Check screen is OK, or the **[No]** button if NG.

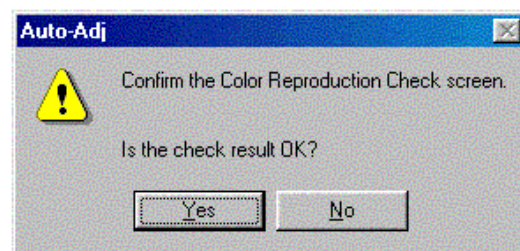


Fig. 6-1-42

- 5) Upon successful completion of “3. Color Reproduction Adj. & Check”, the following message is displayed. Change the chart in accordance with the message.

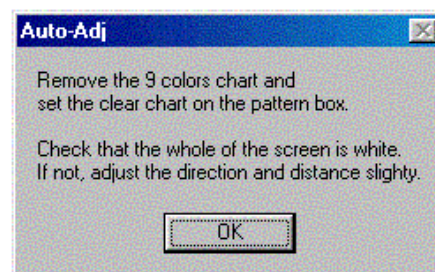


Fig. 6-1-43

- 6) Click the **[OK]** button, and the items from “4. CCD Linearity Check” to “7. Release of Data Setting during Camera Adj.” will be executed.
- 7) Upon successful completion of all items of the CAMERA Adjustment 4, the following message is displayed. Click the **[OK]** button.

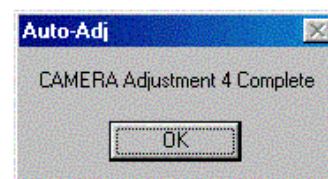


Fig. 6-1-44

## 8. CAMERA Adjustment 5

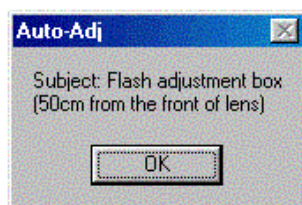
**Note:** "CAMERA Adjustment 5" is available only once after the power is turned on. If the adjustment is retried, turn off the power and turn on again.

### [Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Strobe Adj.
3. Auto Focus Illumination Check
4. Release of Data Setting during Camera Adj.

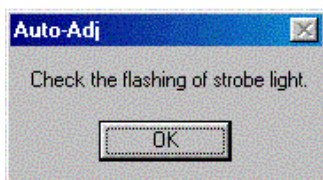
### [Adjusting method]

- 1) Click the **[Start]** button of CAMERA Adjustment 5.
- 2) The Automatic Adjustment Program executes the "1. Data Setting during Camera Adj."
- 3) Upon successful completion of the "1. Data Setting during Camera Adj.", the following message is displayed. Set the subject in accordance with the message.  
(For the Flash adjustment box, refer to "3. Preparing the Flash Adjustment Box" (see page 6-6).)



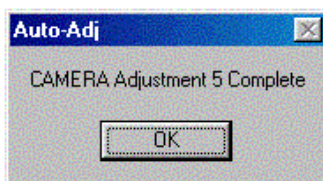
**Fig. 6-1-45**

- 4) Press the **[OK]** button, and the "2. Strobe Adj." will be executed.
- 5) During execution of "2. Strobe Adj.", the following message is displayed. After checking the flashing of strobe light, click the **[OK]** button. (This message is displayed 2 times during execution of adjustment.)



**Fig. 6-1-46**

- 6) Upon successful completion of "2. Strobe Adj.", "3. Auto Focus Illumination Check" is executed.
- 7) Upon successful completion of the "3. Auto Focus Illumination Check", the "4. Release of Data Setting during Camera Adj." will be executed successively.
- 8) Upon successful completion of all items of the CAMERA Adjustment 4, the following message is displayed. Click the **[OK]** button.



**Fig. 6-1-47**



1-5. LCD SYSTEM ADJUSTMENTS

1-5-1. Function of Each Button on LCD System Adjustment Screen

Click the **LCD SYSTEM ADJUSTMENT** button on the Main Menu screen, and the “LCD SYSTEM ADJUSTMENT” screen in Fig. 6-1-48 will appear.

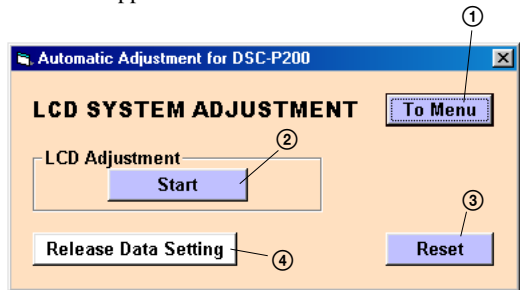


Fig. 6-1-48

- ① **To Menu** button  
The Main Menu screen comes back.
- ② **Start** button  
“LCD Adjustment” starts.
- ③ **Reset** button  
This button functions same as the Reset button of the camera.
- ④ **Release Data Setting** button  
The data setting at the adjustment is cancelled.  
During the data setting, the button color changes from “white” to “red”. When the data setting is cancelled, the button color returns to “white”.  
(Use this button when an error occurred in the LCD adjustment. If the adjustment completed successfully, the data setting is automatically cancelled and the button color returns to “white”.)

1-5-2. Adjustment Items of LCD System Adjustment

The adjustment items of LCD system adjustment are as listed in Table 6-1-4. The Automatic Adjustment Program executes the adjustment items if the LCD Adjustment Start button is clicked.

Button Name	Adjustment	Signal	Page	Address
LCD Adjustment	VCO adj.	Arbitrary	8F	23
	Contrast adj.		8F	2C
	V-COM adj.		8F	24
	White Balance adj.		8F	28, 2A

Table 6-1-4

### 1-5-3. Adjusting Method

#### [Automatic Adjustment Program execution items and sequence]

1. Data Setting during LCD Adj.
2. VCO Adj.
3. Contrast Adj.
4. V-COM Adj.
5. White Balance Adj.
6. Release of Data Setting during LCD Adj.

#### [Adjusting method]

- 1) Click the **[Start]** button of the LCD Adjustment.
- 2) The Automatic Adjustment Program executes the items from “1. Data Setting during LCD Adj.” to “3. Contrast Adj.”.
- 3) Upon successful completion of the “3. Contrast Adj.”, the following message is displayed during execution in “4. V-COM Adj.”. On the SEUS screen, operate the UP/DOWN key so that the brightness of portions A and B on the LCD panel is equal. After the adjustment, click the **[OK]** button.

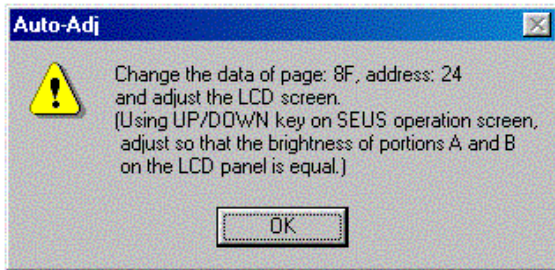


Fig. 6-1-49

- 4) Upon completion of “4. V-COM Adj.”, “5. White Balance Adj.” is executed. The following message is displayed, and then check that LCD screen is not colored.  
If colored, change the data of page: 8F, address: 28 and 2A on the SEUS Operation screen to adjust so that the LCD screen is not colored.

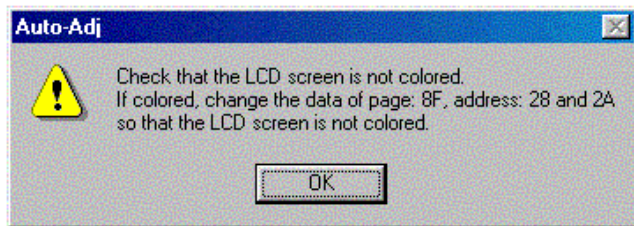


Fig. 6-1-50

- 5) If the **[OK]** button is clicked, “6. Release of Data Setting during LCD Adj.” will be executed.
- 6) Upon successful completion of all item the LCD Adjustment, the following message is displayed. Click the **[OK]** button.



Fig. 6-1-51

### SEUS operation screen

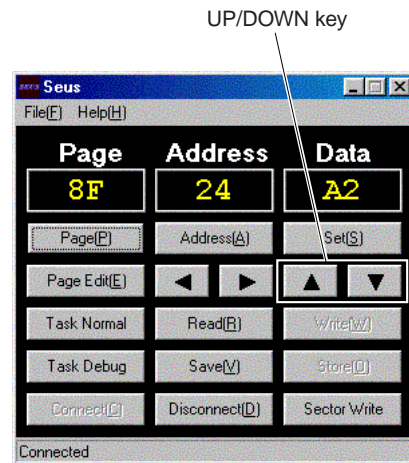


Fig. 6-1-52

### Check on the LCD screen (V-COM Adj.)

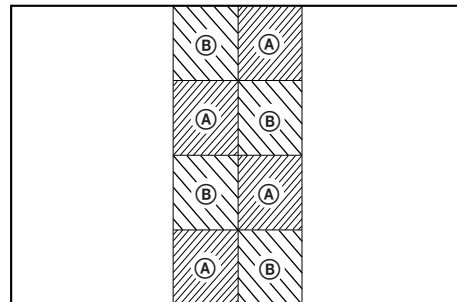


Fig. 6-1-53

## 1-6. ERROR

In case of an error during the execution of adjustment, the Automatic Adjustment Program interrupts the processing at that point, and displays an error message, and then terminates the program execution there.

### 1-6-1. Error Message

When an error message is displayed, perform the remedy given below, and then retry adjustment. If the error message is displayed though the remedy was performed, the circuits will be faulty.

#### 1. Connect Error

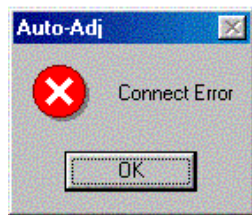


Fig. 6-1-54

Symptom	USB communication with the set is abnormal.
Cause	<ul style="list-style-type: none"> <li>• USB cable is not inserted tightly.</li> <li>• Power supply is not installed correctly.</li> <li>• Communication with SEUS is abnormal.</li> </ul>
Remedy	<ul style="list-style-type: none"> <li>• Disconnect the USB cable once, and then re-connect it tightly and check that the set is in "USB Mode".</li> <li>• Install the power supply correctly.</li> <li>• Start the SEUS and click the <b>Connect</b> to check that the connection state is established.</li> </ul>

#### 2. RESET the CAMERA and Try Again

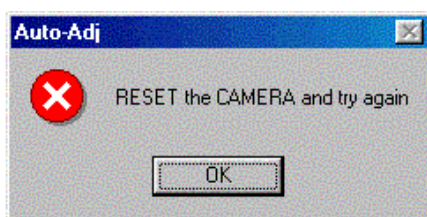
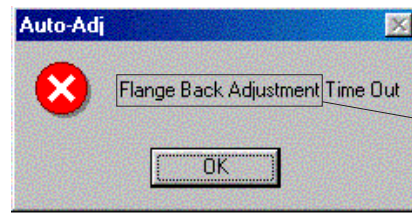


Fig. 6-1-55

Symptom	The camera is not ready for adjustment.
Cause	<ul style="list-style-type: none"> <li>• Data error exists in the camera.</li> </ul>
Remedy	<ul style="list-style-type: none"> <li>• Reset the camera.</li> </ul>

#### 3. Adjustment Time Out

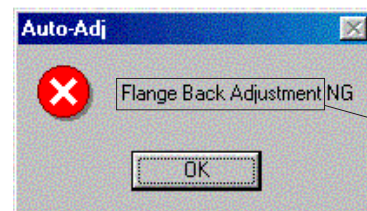


*This part indicates the adjustment item in which an error occurred.*

Fig. 6-1-56

Symptom	Adjustment does not finish within the specified time.
Cause	<ul style="list-style-type: none"> <li>• Adjustment conditions are wrong.</li> <li>• Data error exists in the camera.</li> </ul>
Remedy	<ul style="list-style-type: none"> <li>• Check that the conditions such as a subject are correct.</li> <li>• Reset the camera.</li> </ul>

#### 4. Adjustment NG



*This part indicates the adjustment item in which an error occurred.*

Fig. 6-1-57

Symptom	The adjusted data does not become the specified value.
Cause	<ul style="list-style-type: none"> <li>• Adjustment conditions are wrong.</li> <li>• Data error exists in the camera.</li> </ul>
Remedy	<ul style="list-style-type: none"> <li>• Check that the conditions such as a subject are correct.</li> <li>• Reset the camera.</li> </ul>

## 5. Data Save Error

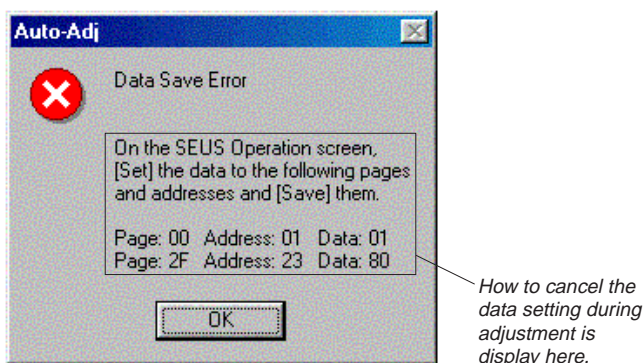


Fig. 6-1-58

Symptom	data cannot be saved normally. (The data setting during adjustment cannot be cancelled)
Cause	<ul style="list-style-type: none"> <li>• Data writing to the flash memory failed.</li> <li>• Connection is faulty.</li> <li>• Power supply is not installed correctly.</li> </ul>
Remedy	<ul style="list-style-type: none"> <li>• On the SEUS Operation screen, [Set] the data to the pages and addresses displayed in the message, and [Save] them. (Cancel manually the data setting during adjustment.)</li> <li>• Check the connection.</li> <li>• Install the power supply correctly.</li> </ul>

## 1-6-2. Precautions When an Error Occurred

The Automatic Adjustment Program sets the data for adjustment before the adjustment starts. Accordingly, if the adjustment terminates by an error, the data during the adjustment may be left in the camera.

**Note 1:** With this data left in the camera, the camera will not operate normally.

In this case, the **Release Data Setting** button is displayed in “red” on the screen as shown in Fig. 6-1-59, 60 and 61. Click the **Release Data Setting** button to cancel the data setting. When the data setting is cancelled, the button color becomes “white”.

**Note 2:** When “Data Save Error” occurred, the **Release Data Setting** button is displayed in “white”.

To cancel the data setting, perform it on the SEUS Operation screen. How to cancel the data setting is displayed in the error message.

## Video System Adjustment screen

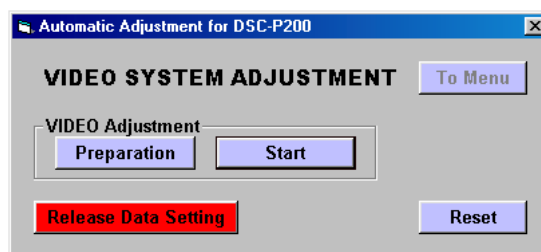


Fig. 6-1-59

## Camera System Adjustment screen

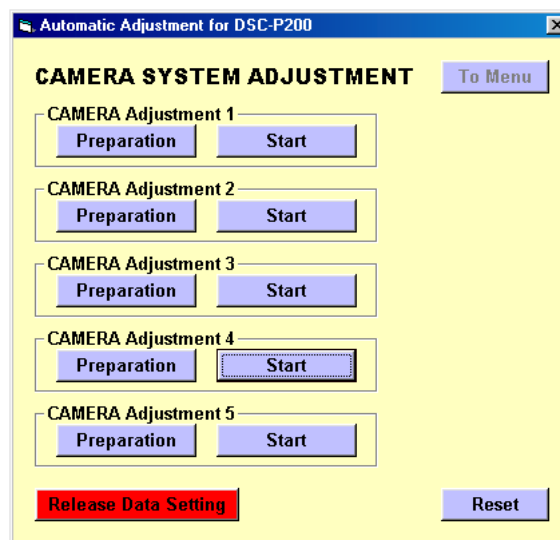


Fig. 6-1-60

## LCD System Adjustment screen

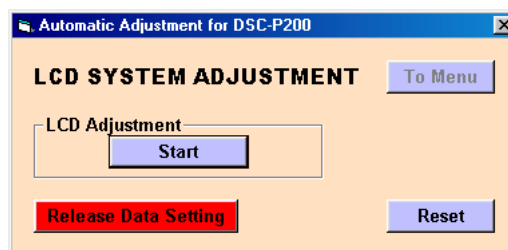


Fig. 6-1-61

## 1-7. INITIALIZATION OF DATA

### 1. Initializing All Page Data

By performing the following procedure, data of all pages will be initialized.

**Note:** If all page data have been initialized, all adjustments need to be performed again.

#### Initializing Method:

- 1) Select page: 00, address: 01 and set data: 01.
- 2) Click **Sector Write** on the SEUS screen to display the SEUS SECTOR WRITE screen.
- 3) Check that the SET ID is "12".
- 4) Click **All** of the ALL SELECT buttons to select all pages. (Fig. 6-1-62 (A))
- 5) Click **Write** to write the initializing data to the flash memory of the camera.
- 6) Wait for 3 sec.
- 7) Click **Close** to close the SEUS SECTOR WRITE screen.
- 8) Select page: 8E, address: 00 and set data: 20.
- 9) Click **Save** on the SEUS screen.
- 10) Wait for more than 3 sec.
- 11) Select page: 80, address: 30, and check that the data is "00".

#### Processing after Completing Initializing

Order	Page	Address	Data	Procedure
1	20	00	29 <b>Set</b>	
2	20	01	29 <b>Set</b>	(Note)

**Note:** At this time, the camera is reset and the power is turns off once and then on again. Accordingly, the message "Receive Packet Error" is displayed on the SEUS screen, and the SEUS goes in "disconnect" state, but this is not a trouble. Click **Connect** on the SEUS screen to restore the "connected" state. (In case that the power does not turn on again, press the power button.)

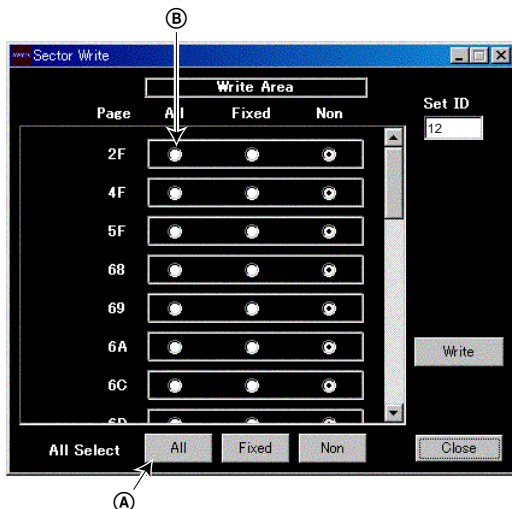


Fig. 6-1-62

### 2. Initializing Single Page Data

By performing the following procedure, data of the page that you want to initialize will be initialized.

**Note 1:** If the 6D or 6E or 6F or 78 page data have been initialized, the following adjustment needs to be performed again.

- 1) Camera system adjustments

**Note 2:** If the 8F page data have been initialized, the following adjustment needs to be performed again.

- 1) Video system adjustments
- 2) LCD system adjustments

#### Initializing Method:

- 1) Select page: 00, address: 01 and set data: 01.
- 2) Click **Sector Write** on the SEUS screen to display the SEUS SECTOR WRITE screen.
- 3) Check that the SET ID is "12".
- 4) Click "All" of the option buttons of target page. (Fig. 6-1-62 (B))
- 5) Click **Write** to write the initializing data to the flash memory of the camera.
- 6) Wait for 3 sec.
- 7) Click **Close** to close the SEUS SECTOR WRITE screen.
- 8) When 8E page is initialized, select page: 8E, address: 00 and set data: 20.
- 9) Click **Save** on the SEUS screen.
- 10) Wait for more than 3 sec.
- 11) Select page: 80, address: 30, and check that the data is "00".

#### Processing after Completing Initializing

Order	Page	Address	Data	Procedure
1	20	00	29 <b>Set</b>	
2	20	01	29 <b>Set</b>	(Note)

**Note:** At this time, the camera is reset and the power is turns off once and then on again. Accordingly, the message "Receive Packet Error" is displayed on the SEUS screen, and the SEUS goes in "disconnect" state, but this is not a trouble. Click **Connect** on the SEUS screen to restore the "connected" state. (In case that the power does not turn on again, press the power button.)



## 6-2. SERVICE MODE

### 1. Setting the Test Mode

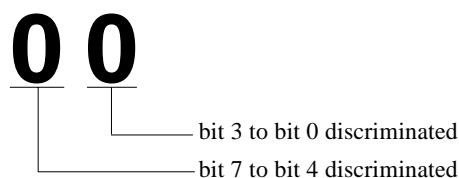
Page 2F	Address 23
Data	Function
80	Normal
00	Forced CAMERA (Auto) mode
01	Forced CAMERA (Program Auto) mode
02	Forced PLAY mode
04	Forced MOVIE mode
05	Forced CAMERA (Manual) mode

- Before setting the data, select page: 00, address: 01, and set data: 01.
- For page: 2F, the data set is recorded in non-volatile memory by saving data. In this case, the Test mode is not released even if the camera is turned off, thus requiring extreme care.
- After completing adjustments/repairs, release the data setting.
  - 1) Select page: 00, address: 01, and set data: 01.
  - 2) Select page: 2F, address: 23, and set data: 80.
  - 3) Save the data.
  - 4) Wait for more than 3 sec.
  - 5) Select page: 80, address: 30, and check that the data is "00".
  - 6) Select page: 00, address: 01, and set data: 00.

### 2. Bit Value Discrimination

In the following items, the bit values must be discriminated from the data displayed on the SEUS. Whether bit values are "1" or "0" can be discriminated from the table shown below.

Data displayed on SEUS



Display on the SEUS	Bit values			
	bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
Ⓐ 8	1	0	0	0
9	1	0	0	1
A	1	0	1	0
B	1	0	1	1
C	1	1	0	0
D	1	1	0	1
Ⓑ E	1	1	1	0
F	1	1	1	1

Example: If the displayed data is "8E", bit 7 - bit 4 values can be discriminated from block (A), and also bit 3 - bit 0 values from block (B).

### 3. LED Check

Page 20	Address 04
Page 80	Address 12
Page 8E	Address FE

#### Using method:

- 1) Select page: 00, address: 01, and set data: 01.
- 2) Select page: 20, address: 04, and set data: 02.
- 3) Select page: 8E, address: FE, and set data: 20.
- 4) Select page: 80, address: 12, and set data: 01.
- 5) Check that all LED are lit.
  - SELF TIMER/AF ILLUMINATOR
  - AE/AF LOCK
  - FLASH CHARGE
  - MS ACCESS
- 6) Select page: 80, address: 12, and set data: 00.
- 7) Select page: 20, address: 04, and set data: 00.
- 8) Select page: 8E, address: FE, and set data: 00.
- 9) Select page: 00, address: 01, and set data: 00.
- 10) Click **Disconnect** on the SEUS screen.
- 11) Disconnect the USB cable.
- 12) Turn off the power.

### 4. Switch Check (1)

Page 80	Address 13
---------	------------

Function	When data = 00	When data = 01	When data = 02
Shutter button (XAE LOCK ON SW) (CONTROL SWITCH BLOCK (RL) S001)	OFF	ON	ON
Shutter button (XSHTR ON SW) (CONTROL SWITCH BLOCK (RL) S001)	OFF	OFF	ON

#### Using method:

- 1) Select page: 80, address: 13.
- 2) By discriminating the read data, the state of the switches can be discriminated.

## 5. Switch Check (2)

Page 20	Addresses 90 to 92
---------	--------------------

### Using method:

- 1) Select page: 20, addresses: 90 to 92.
- 2) By discriminating the read data, the pressed key can be discriminated.

Address	Data					
	00 to 0C	0D to 28	29 to 4A	4B to 77	78 to E4	E5 to FF
90 (KEY AD0) (IC401 ⑥)	MENU (Control switch block (SW51740))	CONTROL DOWN (Control switch block (SW51740))	IMAGE SIZE/ DELETE (Control switch block (SW51740))	CONTROL UP (Control switch block (SW51740))		No key input
91 (KEY AD1) (IC401 ⑥)	DISPLAY/ LCD ON/OFF (Control switch block (SW51740))	CONTROL LEFT (Control switch block (SW51740))	CONTROL SET (Control switch block (SW51740))	CONTROL RIGHT (Control switch block (SW51740))		No key input
92 (KEY AD2) (IC401 ⑥)	ZOOM W (Control switch block (SW51740))	ZOOM T (Control switch block (SW51740))				No key input

## 6. Mode Dial Check

Page 20	Addresses 95, 96
---------	------------------

### Using method:

- 1) Select page: 20, addresses: 95 and 96.
- 2) By discriminating the read data, the state of the mode dial can be discriminated.

Address	Data						
	00 to 0C	0D to 28	29 to 4A	4B to 77	78 to 9B	9C to E4	E5 to FF
95 (MODE DIAL0) (IC401 ⑧)	AUTO (Control switch block (SW51740))	P (Program Auto) (Control switch block (SW51740))	PLAY (Control switch block (SW51740))		MOVIE (Control switch block (SW51740))	M (manual) (Control switch block (SW51740))	Others
96 (MODE DIAL1) (IC401 ⑨)	SCN (Control switch block (SW51740))						Others

## 7. Self Diagnosis Code

Display Code	Countermeasure	Cause	Caution Display During Error
C:32:□□	Turn the power off and on again.	Trouble with hardware.	SYSTEM ERROR
C:13:□□	Format the "Memory Stick".	Unformatted "Memory Stick" is inserted.	FORMAT ERROR
	Insert a new "Memory Stick".	"Memory Stick" is broken.	MEMORY STICK ERROR
E:61:□□	Checking of lens drive circuit.	When failed in the focus and zoom initialization.	—
E:91:□□	Checking of flash unit or replacement of flash unit.	Abnormality when flash is being charged.	



## Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2005.01	Official Release	—	—
1.1	2005.11	Correction-1 (C1)	<ul style="list-style-type: none"> <li>• Correction of the Before starting adjustment</li> <li>• Correction of the Table 6-1-1</li> </ul> S.M. correction: <a href="#">Page 6-1</a> , <a href="#">Page 6-2</a>	Yes